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Private foundations and the development of standardized tests, 1900-1935.

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PRIVATE FOUNDATIONS AND THE DEVELOPMENT OF STANDARDIZED TESTS, 1900-1935

A Dissertation Presented

By

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To Marquita, Al, and Sheila, and to Byrd L. Jones

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ABSTRACT

Private Foundations and the Development of
Standardized Tests, 1900-1935

(September, 1980)

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This study focuses on the early twentieth century role of private foundations in the development of standardized tests. Educators came to accept that the measurement of intelligence was important to teaching and schools. Because both standardized intelligence tests and standardized achievement tests have been used to make judgments about student "capabilities," both are considered.

Information for the study is from archival material of the Rockefeller and Carnegie foundations, from foundation publications, and from primary and secondary historical and educational resources.

Early in the twentieth century, educational research organizations supported the development of norm-referenced, group administered standardized tests. The Carnegie Foundation for the Advancement of Teaching and the General Education Board provided major funding and

encouragement for that development, contributing significantly to the development of standardized tests.

The ideological viewpoint of private foundations and the development of practices in education reinforced assumptions that the measurement of intelligence was a significant concern. Foundation reactions to grant proposals and to research developments revealed their interest in the development of systems to differentiate human capacities.

The study considers early general interest of these foundations in the development of the tests and accompanying historical trends, especially social Darwinism as manifested at the beginning of the twentieth century and naturalistic thought. These and "scientific management" trends affected the development of the frames of reference from which the two foundations were to operate between the time of their founding and 1935. Such trends also affected the standardized tests that were developing during the same period. Discussion of relationships between developing efficiency systems, foundation policies, and standardized tests clarify the interactions.

Details of the early progress of standardized test development concentrate on General Education Board contributions to the development of the National Intelligence Test. Foundation grants sought and received by Lewis-

Terman demonstrate growing foundation and educational interest in the use of tests to distinguish between so-called levels of human intelligence.

The more rapid development of standardized tests which followed World War I indicates the increasing variety of purposes to which tests were put. Secondary and primary sources demonstrate how standardized tests were used to advance non-educational purposes. Primary foundation sources reveal continuance into the 1930s of the conviction that the measurement of possible differences in the intelligence and creativity of individuals was important to educational goals. Analyses of foundation interaction with various research projects that related to test development provide examples.

The conclusion of this segment of the study is that attention to student differences tended to result in barriers to equal educational opportunity.

Early development of standardized tests was initiated and fostered by an ideological environment that accepted the nineteenth century sorting function of education which separated people who would take leadership roles in the society from people who would be directed to subordinate roles. In a sense standardized tests enabled schools to continue that function through the first four decades of the twentieth century. Dramatic increases in the

proportions of young people enrolling in and completing secondary school and the social changes which accompanied those increases, however, made the sorting function less and less appropriate.

A more tentative conclusion of the study is that the Carnegie Foundation and the General Education Board were only slightly more responsible for sustaining the sorting function of education than were the more general intellectual and moral biases of the period.

Perhaps equally well-intentioned attitudes underlie current institutional sorting and labeling practices in United States schools. Educators are encouraged to question assumptions about the purposes that are served by so-called measurements of intelligence.

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INTRODUCTION

Purpose and Rationale

This study focuses on the early twentieth century role of private foundations in the development and implementation of what have become widely used tools of contemporary education, standardized achievement and intelligence tests. It uses an historical perspective to examine some of the reasons educators have supposed that the measurement of intelligence is important to teaching and schools. Standardized intelligence tests have been the main tool used to serve that conception, but because standardized achievement tests, by association, have also been used to make judgments about "capabilities," both are considered here.

The study is significant because it deals with an impact on schooling of an external force which viewed society and the needs of education from a vantage point that was more monied and prestigious than most of the society that schools were meant to serve. The stated intent of the foundations was to serve society at large. This study examines how effectively that intent was carried out.

In order to consider some effects of the influence of the foundations on the development of standardized tests and thus on education, a concentrated perusal of the literature is necessary. The parameters of the inquiry are the period with which the study deals, 1900-1935, with some necessary retrospective glances into the circumstances which led to turn of the century trends; two of the largest and earliest of private foundations for education, the Carnegie Foundation for the Advancement of Teaching and the General Education Board; and norm-referenced, group administered standardized tests in which those foundations demonstrated interest. The two foundations are viewed as representative of the role private foundations played in making standardized tests usable and acceptable to United States education.

The purpose here is to look, through the prism of the development of standardized tests, at the interplay between the special point of view of the private foundations and the development of practices in education which reinforce the assumption that the measurement of intelligence is important.

The early decades of the period dealt with were especially important in the shaping of United States society. According to historian Robert Wiebe,

> in a general sense, the nation had found its direction early in the twentieth century. The society that so many in the nineties had thought would either

> disintegrate or polarize had emerged tough and plural; and by 1920 the realignments, the reorientations of the progressive era had been translated into a complex of arrangements nothing short of a revolution could destroy.[1]

A complementary although more radical viewpoint about the significance of that period has also been expressed by political scientist, James Weinstein.

> . . . the political ideology now dominant in the United States, and the broad programmatic outlines of the liberal state (known by such names as the New Freedom, the New Deal, the New Frontier, and the Great Society) had been worked out, and, in part, tried out by the end of the First World War.[2]

This socially and politically significant historical period was also the period during which both standardized tests and the two private foundations to be discussed were established. Both the tests and the foundations were influenced by the trends of those two decades and by the perspective of the people who formed the early policies of the foundations. Foundation assumptions that affected the initial development of standardized tests continued beyond that period and into the period of significant social change which was the depression of the 1930s.

Foundation Interests in Standardized Testing

The Carnegie Foundation for the Advancement of Teaching and the General Education Board, large private foundations that were organized before 1910, originated for service to public and higher education in North

America, especially the United States. Both took an early and active interest in the development of standardized achievement and intelligence tests. The perspective which they applied to education and to standardized tests was affected by the intellectual and social trends of the time and by the conservative point of view with which they embraced those trends.

The Carnegie Foundation for the Advancement of Teaching was founded in 1905 for the purpose of providing retirement pensions for professors of higher education. Their first task was to identify which educational institutions actually served the cause of "higher education." A tentative solution to this problem was to attempt to define such institutions according to a standard of college and entrance requirements.[3] The lack of uniformity of such requirements among well-established institutions that were clearly recognized as legitimate colleges and universities, however, made their application improbable.

A more "objective" standard which would be acceptable to reputable institutions and, at the same time, not impinge on the independence of those institutions, was needed. Looking forward to the development of such a standard, the Carnegie Foundation* watched closely the efforts

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*For simplicity, the abbreviated version of The Carnegie Foundation for the Advancement of Teaching used by Carnegie literature, that is, the "Carnegie Foundation," will be used here.

of the College Entrance Examination Board, a collaboration of colleges and universities that was experimenting with the development of uniform college entrance examinations.[4] The Foundation's first financial assistance to that Board occurred in 1917.[5]

By 1912, the Carnegie Foundation perceived development and use of standardized tests for college admissions as work of the "highest value."

> The action of our oldest university in undertaking examinations of a new [standardized, comprehensive] sort is a step in educational leadership of the highest value, and one in which every college and every university must feel an interest. The outcome of this will depend, in a large measure, on the ability of those in charge to devise examinations which shall be fair tests of the student's intellectual achievement.[6]

The General Education Board, founded by John D. Rockefeller in 1902, began operations with a more general concept of its role than did the Carnegie Foundation. Its first objective was to "devote itself to studying the needs and aiding to promote the educational interests of the people of the Southern states."[7] Towards this goal numerous state educational surveys were undertaken which made use of uniform, group-administered tests of types similar to those which had been in limited use since the late 1800s[8] and which resembled the standardized tests which came into common use in the early 1920s.[9] The surveys were normally co-sponsored by state and General Education Board, G.E.B. staff members acting as administrators of the task.[10]

The Board found standardized tests quite useful in serving the "ultimate purpose" of the state surveys, which was to "improve educational conditions through a successful appeal to intelligent public sentiment."[11] Following a special appropriation by the General Education Board for the purpose of adding testing components to the Virginia survey in January, 1919,[12] a memorandum expressed the nature and importance of the appeal of tests to public sentiment:

> For [the layman] objective data showing results of a definite character carry great weight and many times carry conviction not afforded by professional opinion, of which he is ever critical, if not sceptical. Hence it is that the results of tests and measurements are found frequently effective in persuading to legislation and regulations necessary for effective organization and administration.[13]

The Board continued to encourage their use. A few months later, General Education Board secretary, Abraham Flexner, was "strongly inclined to suggest to our Board that we enlarge our North Carolina work by giving the achievement tests [in general ability, arithmatic, spelling, writing, and reading]. . ."[14] Still later, additional standardized tests in Latin, algebra, arithmatic, and English were added to the North Carolina survey following another Flexner suggestion.[15] Here, too, a special appropriation was made for the purpose. The "distinctive feature" of the North Carolina survey would be "the use of 'standard tests' of classroom work in the rural schools."[16]

Continued enthusiasm by these foundations for the development of standardized tests was evidenced mainly by continued support of projects which made extensive use of them into and beyond the 1930s.[17] The Carnegie Foundation especially was impressed with the contributions of tests to "very important changes in American education." The Carnegie Foundation numbered grants related to standardized test development as "among the most fruitful of modern educational instruments."[18]

A more general concern to which foundations gave their attention during the first three decades of their operation, but one which contributed to test development, was the rising cost of education. An essay in the Carnegie Foundation annual report for 1922 addressed the history of the educational economy issue and attempted to list the causes of increasing costs. These included "evident and natural" factors, namely increases in student enrollment, new buildings and other facilities, and the rise in the scale of teachers' salaries.[19]

Also listed, and given considerably more attention, were "invisible" factors summarized as the public's overestimation of the potential value of formal education, "the admission of great numbers of pupils, ill-fitted for the higher and more expensive schools, such as the high school and the college," "so-called" curriculum enrichment, and the introduction of vocational training as part of the

enrichment process.[20]

Standardized intelligence and achievement tests were useful in distinguishing the "ill-fitted" from the well-fitted students, that is, in determining which students could be most easily (and cheaply) educated beyond the basics of elementary school. The percentage of fourteen to seventeen year olds enrolled in public secondary schools in 1900 was only 8 percent; in 1910, 13 percent.[21] At a time when so few were expected to even attempt secondary school, the "right" to education was perceived as the right to basic elementary schooling. Thus, predicting which students should be encouraged to continue education beyond the common school was not an affront to individual rights but a boon to practical considerations which would save taxpayer money.

Stimulated by changes such as the enforcement of compulsory education laws, the development of effective child labor laws, and a gradually increasing white-collar labor market, however, the number of students continuing schooling into the secondary grades began to increase at a more rapid pace. By 1920, the percentage of fourteen to seventeen year olds enrolled in public secondary schools had increased to 28 percent; by 1930, to 46 percent.[22] The percentage for cities was even higher, with 61.6 percent of fourteen to seventeen year olds enrolled in secondary schools in 1920, and 73.1 percent in 1930.[23]

Obviously, the greater percentages of teen-agers were continuing school, postponing their entrance into the labor market.

The challenges of education, especially secondary education, were changing. Educators noticed wider varieties of students as they faced larger numbers of students. The choice taken by educational research for adapting to these larger numbers was to emphasize the differences they observed in students. New types of educational structures such as tracking and vocational training were developed for students who did not respond readily to the regular secondary curriculum.[24] By emphasizing differences, different levels of education developed, in spite of what some of them added to the cost of education.

As of 1920, standardized intelligence and achievement tests were generally accepted into public schools as devices which would define student differences.[25] The tests, still a new technique, continued to be refined. The direction taken in that refinement was a continuation of what had already begun--the ostensible measuring of student capabilities which emphasized levels of differences.

Ralph W. Tyler, a leader in educational testing and in curriculum development since the late 1930s, described in 1976 the direction taken by tests and education during the (formative) period discussed here:

> Unfortunately, at a time when the need for universal education was developing, the testing movement furnished both an ideological and an instrumental basis for the practices of schools and colleges in sorting students rather than educating them. It also helped to establish the view that an individual's educability or capability could somehow be measured apart from his achievement . . .
>
> . . . Even today, serious and extensive efforts are made to use intelligence or aptitude testing to establish a child's potential for education. Such efforts have served to distract attention from the problem of helping all children learn.[26]

Test development was effectively directed by the continuation of an attitude which perceived "higher and more expensive schools, such as the high school and the college," as not appropriate for all students. By the 1920s, greater numbers of people sought learning beyond the basic skills and the economy began to require that greater percentages enter white-collar occupations that required wider varieties of skills.[27] The refinement of standardized tests, a significant part of it being aided by the Carnegie Foundation and the General Education Board, continued towards ever finer differentiations of student capabilities, aptitudes, and even personality traits.

A point of view which did not value the increasing need for educating more people and for providing more flexible education was illustrated by a 1932 statement in the annual report of the General Education Board. An "emergency grant" for the completion of a phase of research which experimented with "vocational aptitude tests as a guide to industrial placement," was explained by the following:

> The search for a means of determining the fitness or unfitness of individuals for given types of occupations has led to the development of numerous tests to measure intelligence, specific abilities, achievements or knowledge, and traits of personality. Momentum to this search has been given by the demands of modern industry and business for efficiency in workers, by a growing conviction that it is economically wasteful to attempt to train individuals for work for which they are intellectually or tempermentally unsuited, and by a general recognition that individuals will be better adjusted socially if they are in occupations for which they are well adapted.[28]

Such a viewpoint, expressed during a period of severe economic depression, certainly recognized the cost-efficient needs of businesses struggling to survive. By coupling these needs with a theory of individual social adjustment, the statement also provided a "beneficent" argument against liberal hiring of new workers. In other words, the perspective placed greater value on business needs than on people's needs for employment. By implication, the attitude was not appreciative of the growing need to prepare people for a job market requiring versatility of its workers--a versatility that had been considerably less important twenty years earlier.

Historical Context

Clearly, the General Education Board and the Carnegie Foundation for the Advancement of Teaching were only part of a much larger state of national affairs. Large private foundations and standardized tests developed during a period of United States history which witnessed

the shift from a predominantly agrarian to a predominantly urban society. Informal pressures of small community living which had provided the discipline necessary for living in groups became less available in the urban setting.

Traditions of freedom which had formerly given society a general value system by which to function only complicated the awkward shift to an urban society. The industries around which cities developed had grown rapidly within a non-system of laissez-faire justified by personal freedoms "to exploit and to be exploited."[29] The nebulous traditions of these freedoms led in early twentieth century United States cities to what social scientist Robert S. Lynd called "unorganized confusion at the grass-roots of local living."[30]

Change was characteristic of late nineteenth and early twentieth century United States and still more rapid change could be anticipated. By the retrospective analysis of historian Robert Wiebe, the United States became "a society without a core. It lacked those national centers of authority and information which might have given order to such swift changes."[31]

This corelessness was accompanied by a pattern of influential thought which connected to the biological principles established by Charles Darwin and to the sociological principles advanced by Herbert Spencer and William Graham Sumner at mid-nineteenth century.[32] It responded

easily to theories of the immutability of "natural law." One of the manifestations of the search for means which would provide concrete, ostensibly scientific bases for decision-making was standardized tests.

The pattern of thought, sometimes referred to as naturalism, "composed a fairly well-defined bundle of ideas held by many Americans between the Civil War and the Great Depression of the 1930s. [Although it did not] completely dominate American thinking, [it was able to exert disproportionate influence] because it was identified chiefly with articulate groups of the intelligentsia."[33]

By "engag[ing] in a common quest for certainty in the form of a unitary or all-embracing explanation of experience,"[34] naturalism provided a point of view which could be stabilizing, although somewhat fatalistic, at a time when old values seemed no longer to serve human needs. Carried into the social realm, predominant natural law was presumed to have a "coercive power over man and society."[35]

The basic law of naturalism was the law of evolution.[36] Applied to society, a theory of natural "evolution" towards an ever-higher form of civilization gave some sense of order to a society that was struggling with the problems of rapid change. Applying evolutionary theories to social problems seemed to stabilize change by imposing an intelligible sequence upon it.[37]

The imposition of orderly sequence, usually

according to the presumed laws of biological evolution, was made on non-biological questions. "The naturalist believed it possible to reduce relatively complex social phenomena to relatively simple biological terms and these, in turn, to even simpler physical and mechanical terms."[38]

These trends of thought helped make the climate of early twentieth century United States appropriate for the development of tests which would purport to measure the dimensions and amounts of human intelligence. Standardized intelligence tests especially helped to "objectively" define the components of intelligence. By so doing, their use could help to explain issues related not only to education but also to such issues as the causes of crime and the worries resulting from changing trends in immigration. In such an environment, it is also not surprising that the tests would be useful to the eugenics movement of the 1910s and 1920s.[39]

The norm-reference form taken by those early tests --that is, the scoring procedure which quantitatively ranks those who take the test--was particularly appropriate to the early twentieth century period of United States history during which new means of ordering life were sought.

> . . . in a time of confusion [Americans] responded with a quantitative ethic that became the hallmark of their crisis in values. Men defined issues by how much, how many, how far. Greatness was determined by amount, with statistics invariably the triumphant

> proof that the United States stood first among nations . . .
>
> . . . For lack of anything that made better sense of their world, people everywhere weighed, counted, and measured it.[40]

Large private foundations were not the sole influence for standardized test development. Neither were they the sole influence for those tests being used to rank students in such a way as to nurture a human labeling system which would help to perpetuate education's ancient sorting function. Their willingness, however, to provide money to get test development underway (and to provide that money from the perspective of a small, potentially powerful minority) facilitated those tests becoming one form that the national search for order would take.

The following study considers standardized tests from within the context of their early development under the support of two large private foundations, the Carnegie Foundation for the Advancement of Teaching and the General Education Board. Chapter II describes the frame of reference from which those foundations were to operate between the time of their founding and 1935--a frame of reference strongly influenced by naturalistic thought. Chapter III describes the progress of early test development, concentrating on General Education Board contributions to the development of the first standardized intelligence test to be accepted into the public schools on a national scale. Chapter IV discusses and gives examples of the continuation

of that support into the 1930s, after naturalistic thought had begun to dissipate in the economically depressed society which compelled people to act with a faith inconsistent with the fatalism of naturalistic thought.[41] A summary of implications and general conclusions from the information are drawn in Chapter V.

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[3]The Carnegie Foundation for the Advancement of Teaching, First Annual Report of the President and Treasurer (Boston: D.B. Updike, The Merrymount Press, 1906), pp. 38-47 passim (hereafter cited as Carnegie Foundation).

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[5]Fuess, p. 71.

[6]The Carnegie Foundation, Seventh Annual Report, 1912, p. 107.

[7]The General Education Board: An Account of its Activities, 1902-1914 (New York: General Education Board, 1915), p. 15.

[8]North Tarrytown, New York, Rockefeller Archives, File "Maryland Survey of Public Education, 1915-1923," Record Group 629, Box 276/2881; Rockefeller Archives, File "Survey of Public Education in Virginia, 1918-1923," Record Group Val73, Box 188; Rockefeller Archives, File "North Carolina Survey of Public Education," Record Group NC 245, Box 118; General Education Board, Report of the Secretary, 1915-1916, pp. 28-29; and David B. Tyack, The One Best System: A History of American Urban Education (Cambridge, Massachusetts: Harvard University Press, 1974), pp. 44-49 passim.

[9]Tyack, p. 207.

[10]The General Education Board: 1902-1914, chaps. 2-8 passim; General Education Board, Report of the Secretary, 1914-1915, chap. 6 passim; and General Education Board, Report of the Secretary, 1915-1916, chaps. 4-5 passim.

[11]Abraham Flexner to J. Y. Joyner, 11 January 1917, Box 1066, Record Group 188, Rockefeller Archives.

[12]Flexner to Harris Hart, 30 January 1917, Box 1767, Record Group 118, Rockefeller Archives.

[13]Survey of Public Education in Virginia, "Memorandum A, The Place of Tests and Measurements in the Virginia Survey," Box 188/1767, Record Group Va 173, Rockefeller Archives, pp. 1-2.

[14]Flexner to M. E. Haggerty, 5 May 1919, Box 1066, Record Group 118, Rockefeller Archives; and "Plans for the Division of Measurements and Tests," 24 February 1919, Box 188/1767, Record Group Va 173, Rockefeller Archives.

[15]Flexner to Frank P. Bachman, 20 October 1919, Box 118/1067, Group NC 245, Rockefeller Archives.

[16]Flexner, "Memorandum for Mr. Harris," Box 118/1067, Record Group NC 245, Rockefeller Archives.

[17]For a discussion of this matter, see Chapter IV of this manuscript.

[18]Carnegie Foundation, Thirty-second Annual Report, 1937, p. 65.

[19]Carnegie Foundation, Seventeenth Annual Report, 1922, pp. 98-100.

[20]Ibid., pp. 98, 100-108 passim, 116-117.

[21]United States Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition, Part 1 (Washington, D.C., 1975), Series A 29-42, "Annual Estimates of the Population, by Age: 1900 to 1970," and Series H 412-432, "Kindergarten, Elementary, and Secondary Schools Enrollment: 1870-1970."

[22]Ibid.

[23]Tyack, p. 183.

[24]Ibid., pp. 209-210.

[25]Ibid., pp. 207-208.

[26]Ralph W. Tyler, Perspectives on American Education: Reflections on the Past. . . Challenges for the Future (Chicago: Science Research Associates, Inc., 1967), pp. 30-31.

[27]Stow Persons, American Minds: A History of Ideas (New York: Holt, Rinehart and Winston, 1958), p. 220.

[28]Annual Report of the General Education Board, 1931-1932, pp. 16-17 (hereafter cited as Annual Report, G.E.B.).

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[30]Ibid., p. 212 n.

[31]Wiebe, p. 12.

[32]Ibid., pp. 40, 134-136.

[33]Persons, p. 217; and Henry Steele Commager, The American Mind: An Interpretation of American Thought and Character Since the 1880's (New Haven: Yale University Press, 1950), pp. 203-204.

[34]Persons, p. 323.

[35]Ibid., p. 223.

[36]Ibid., p. 236.

[37]Ibid., p. 323.

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[39]Carnegie Institution of Washington, Yearbook 24, 1924-1925 (Boston: D.B. Updike, The Merrymount Press, 1926), p. 47; Carnegie Instituton of Washington, Yearbook 27, 1927-1928, p. 67; and Leon J. Kamin, The Science and Politics of I.Q. (Potomac, Maryland: Lawrence Erlbaum Associates, 1974), chap. 2 passim.

[40]Wiebe, pp. 40, 43.

[41]Persons, p. 342.

C H A P T E R II

THE PRIVATE FOUNDATION FRAME OF REFERENCE

An understanding of the origins of the Carnegie Foundation for the Advancement of Teaching and the General Education Board is necessary to appreciate the frame of reference from which they were to operate until at least 1935. That frame of reference was influenced by the trends of neo-Darwinism and scientific management and by the complementary perspectives of founders who believed in the economic and political system which had made their accumulation of wealth possible. The historically contemporaneous development of standardized tests was influenced by the same social and intellectual trends of the period. Because the Carnegie Foundation for the Advancement of Teaching and the General Education Board were in the business of giving money to educational research, including that which led to the development of standardized tests, a double-whammy effect on the direction of development and use of those tests resulted.

The Origins of United States Philanthropic Institutions

The larger private foundations of the United States

such as the Carnegie Corporation of New York, the Carnegie Foundation for the Advancement of Teaching, the Rockefeller Foundation, and until its dissolution in 1964, the General Education Board, are uniquely American institutions. In the United States, private organizations for philanthropy had an exceptionally amenable environment for developing into large, complex institutions.[42] A clue to the magnitude of their size is the fact that before their deaths in 1937 and 1919, John D. Rockefeller provided approximately $500,000,000 and Andrew Carnegie provided approximately $350,000,000 to various benefactions and foundations operating with funds initially donated by them.[43]

Philanthropy, giving to one's fellow human beings, was by no means the invention of Andrew Carnegie and John D. Rockefeller. Egyptian Pharoahs are known to have set aside funds to be used after their deaths. Philanthropy has existed for centuries, remarkable philanthropy ultimately motivated by the desire to achieve a form of immortality. Ancient philanthropic plans were devised primarily to preserve the ideas and/or memories of their originators through such contributions to society as monuments and art and manuscript depositories.[44]

Philanthropy for the purpose of helping people occurred after it came predominately under the control of organized religion in the middle ages.[45] Religious ideas were perpetuated; at the same time, people who were

identified as needing aid could receive it. Emphasis shifted firmly to the latter with Queen Elizabeth I's Statute of Charitable Uses.[46] This statute stipulated that philanthropic monies were to be directed to people such as the aged, poor, and ill, institutions such as schools and prisons, and the maintenance of public conveniences such as bridges and highways.[47] In England, at least, the function of philanthropy as being for the direct benefit of living people was thus established.

This was the spirit of philanthropy brought to the United States. But the large United States foundations (sometimes referred to as "the great foundations") did not imitate European philanthropy beyond that basic principle. American foundations were to attempt to affect more than the symptoms of social problems; they were to look at society's problems from a broader, more abstract perspective and to seek ways to uplift society as a whole. As expressed in 1930 by Carnegie Corporation president Frederick Keppel,

> The purely charitable trusts. . . are of less significance to the community than the foundations whose purpose is constructive rather than palliative and which have to do with educational, scientific and social progress.[48]

Three features of the United States environment which contributed to the foundations looking to larger objectives for their philanthropy were the exceptional size of the fortunes supporting them, the lack of government

control, and the value system of that environment. A laissez-faire capitalism allowed the accumulation of private fortunes large enough to facilitate an ambitious approach to philanthropy. Private fortunes made for private philanthropy. While government has occasionally investigated foundation activities as during the 1910s with the Congressional Industrial Relations Hearings and during the 1950s with the Congressional Select Committee to Investigate Foundations Hearings, United States philanthropic foundations have not been subject to government controls beyond requirements for regular financial statements.[49] Freedom of action and large financial bases allowed United States foundations to cultivate a large, general approach to philanthropy. Besides, in the spirit of "give us your poor, your tired, your weak," the United States itself, ideally, was supposed to be the answer to the mundane problems of individuals--especially from the perspective of those who had succeeded financially and socially.

The stewardship of wealth. The great wealth that accompanied massive industrial growth after the Civil War went to a relatively small number of industrialists and business leaders. Because many feared that democratic America was developing an aristocracy of the wealthy, criticism of such wealth was not uncommon. In 1889, Andrew Carnegie, who had built a fortune in the steel industry, published an essay

future progress of the race."[50]

Carnegie felt that the inequality of wealth which resulted from competition was positive for the advance of civilization. Conditions precipitated by industrial success under the law of competition were, for all people, superior to what existed in other times and other cultures. The wealth of some pushed forward the culture for all people. From unequal wealth had come problems such as employer and employee becoming strangers to one another. Carnegie, however, regarded these problems as inconsequential in light of material development gained.[51]

Carnegie considered unequal distribution of wealth as merely a temporary state if society would only continue to allow the natural laws of competition and accumulation of wealth to operate freely. Those people who had secured extraordinary wealth under the system, by so doing, had demonstrated superior abilities. Therefore, if they be allowed to freely exercise their rare talent for organization and management, and if they accepted their duty to the society which provided their wealth, Carnegie's "proper mode of administering wealth after the laws upon which civilization is founded" would be followed.[52]

The drift of Carnegie's sense of the proper administration of wealth was controlled by the same assumption of laws which he believed had created wealth and by confidence that adherence to those laws would allow for the continued

progress of humanity. To explain:

According to the essay, the United States system of competition had provided some few individuals a surplus of wealth. The fittest of the race had been identified by that accumulation of wealth.

> It is a law, as certain as any of the others named, that men possessed of this peculiar talent for affairs, under the free play of economic forces, must, of necessity, soon be in receipt of more revenue than can be judiciously expended upon themselves; and this law is as beneficial for the race as the others.[53]

Carnegie believed that continuation of the existing system would assure the continued progress of society by providing the framework which allowed those possessed of the "peculiar talent for affairs" to administer their surplus wealth "for the common good."

> This wealth, passing through the hands of the few, can be made a much more potent force for the elevation of our race than if it had been distributed in small sums to the people themselves.[54]

Carnegie's perception of the duty of the rich was consistent with his perception of the flow of civilization's progress. Under his interpretation of survival of the fittest, the accumulation of wealth by the fittest inevitably accompanied the continual flow of progress.[55] Those who had gained extraordinary wealth had a duty to use their wealth and talent to aid the continuation of that progress. This concept of duty soon became known as the stewardship of wealth.

The duty of the wealthy, according to Carnegie, was

> to consider all surplus revenues which come to him simply as trust funds, which he is called upon to administer, and strictly bound as a matter of duty to administer in the manner which, in his judgment, is best calculated to produce the most beneficial results for the community--the man of wealth thus becoming the mere agent and trustee for his poorer brethren, bringing to their service his superior wisdom, experience, and ability to administer, doing for them better than they would or could do for themselves.[56]

The wise distribution of wealth would require the choice of the fittest beneficiaries. The objects of philanthropy must be carefully and wisely considered for, from Carnegie's point of view, it would be "better for mankind that the millions of the rich were thrown into the sea than so spent as to encourage the slothful, the drunken, the unworthy."[57]

> In bestowing charity, the main consideration should be to help those who will help themselves; . . . Those worthy of assistance, except in rare cases, seldom require assistance. . . . He is the only true reformer who is as careful and as anxious not to aid the unworthy as he is to aid the worthy. . .

Carnegie's examples of proper philanthropy reveal the large, general approach to giving that was discussed earlier.

> The best means of benefiting the community is to place within its reach the ladders upon which the aspiring can rise--parks, and means of recreation, by which men are helped in body and mind; works of art, certain to give pleasure and improve the public taste, and public institutions of various kinds, which will improve the general condition of the people.[58]

In spite of early claims to "superior wisdom," Carnegie's perspective seemed unable to imagine a human condition very different from his own. People caught in a

struggle for sheer survival are not likely to be able to take much advantage of benefactions designed to "improve the public taste." And Carnegie's concept of worthy persons does not seem to consider the possibility that some members of the community might well be "aspiring" but unable, for perfectly worthy reasons, to reach even the bottom rung of the ladder that "wise" philanthropy has provided.

Sustaining the point of view. The assumptions of the Virtue of Wealth, the assumed superiority of those who had it, and the belief in the economic and political system which had led to it did not allow for the conventional charity of other eras and in other nations. Operating policies of the Carnegie Foundation for the Advancement of Teaching and the General Education Board emanated from these assumptions. Philanthropy which focused its attention on the large issues of improving society as a whole resulted.

More than thirty years after Carnegie's essay was published, Frederick Keppel, long associated with foundations in general and president of the Carnegie Corporation of New York from 1923 to 1941, reasserted the points of view of the rich serving society as stewards and trustees of wealth and of faith in continuing progress.

> One can. . . only guess at the reasons for the creation of any specific foundation. . . . But the dominating reason, I am sure, is the recognition of "the stewardship of surplus wealth." A sense of stewardship alone, however, would not account for the greatest of these gifts. They represent a faith in man

> and in his possibilities for progress which lies deeper than the sense of stewardship.[59]

Carnegie was not alone in his attitudes toward the proper administration of wealth. Nor was he without influence on others.

> . . . After [Rockefeller's] initial gifts to the University of Chicago, but several years before the endowment of the first of the great Rockefeller trusts, the elder Mr. Rockefeller had written to Mr. Carnegie his appreciation of what the latter had already done, approving his published statements, and indicating his hope that men of wealth would more and more come to follow his example.[60]

This, however, is not to suggest that Rockefeller merely followed Carnegie's example. Giving, especially to church causes, had been a lifelong habit of John D. Rockefeller and it was a practice which he took very seriously. According to biographer Allen Nevins, the proper disbursal of his charities had become the cause of "much worry and labor" by the late 1870s. Giving was a chore which had to be carefully calculated.

> As his wealth multiplied and his gifts grew proportionately larger, his love of efficiency rendered him anxious to make the best possible use of his money. He knew that his gifts might easily do more harm than good.[61]

Neither the General Education Board, founded by John D. Rockefeller, nor the Carnegie Foundation for the Advancement of Teaching was administered by its founders. Both appointed trustees to conduct the activities of these

foundations.* But from the beginning, both foundations were strongly affected by the attitudes of the men who created them. For example, the very name of the Carnegie Foundation for the Advancement of Teaching was chosen "after much discussion, and after long seeking for a name which might express the purpose of the Foundation. . . intended by its Founder for the upbuilding and the strengthening of the calling of the teachers."[62] And Rockefeller's concern for the efficient use of his contributions, for "very satisfactory evidence that within [any new interest] there is [sic] the stickative qualities,"[63] was consistently attended to by the trustees of the General Education Board. For example, in choosing institutions of higher learning for appropriations, the Board would choose institutions perceived as possessing characteristics and qualities which virtually assured continuing development.

> The Board by preference selected for assistance institutions situated within a [geographic area] where students could be easily procured, where the fostering care of a prosperous community could be counted on, where an appetite for knowledge and culture could be readily stimulated and gratified.[64]

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*Study of the early literature of these two foundations, published and unpublished, shows that while both men made suggestions for projects, trustees acted upon such suggestions only if they could be adjusted to the requirements of the charters. More often, personal charities would receive direct donations from Carnegie or Rockefeller. Incidentally, it is this writer's conclusion that Carnegie was more likely to "meddle" than was Rockefeller.

A direct relationship between the General Education Board's policy of conditional giving and the earlier attitudes of Rockefeller also existed. By the 1870s, Rockefeller concluded that organizations needing financial aid should not depend totally on one donor.[65] The trustees of the General Education Board maintained that position.[66]

As time passed, foundation adherence to the philanthropic principles held by Andrew Carnegie and John D. Rockefeller became less rigid. Nevertheless, the original founding principles continued to be applied to policies which regulated their activities well into the 1930s.

The Establishment of Two Foundations for Education

Education provided an appropriate object for United States philanthropy and the improvement of education became the purpose of both the General Education Board and the Carnegie Foundation for the Advancement of Teaching. The "proper" administration of surplus wealth would consciously contribute to what trustees saw as the advance of society and civilization. Its disbursal should be for purposes perceived to be far-sighted and socially responsible. Education could eventually serve a large portion of the population and it could advance the progress of civilization.

The General Education Board. The General Education Board was founded by John D. Rockefeller and incorporated by Act

of Congress on 12 January 1903. Its general objective as stated in the charter was to promote "education within the United States of America, without distinction of race, sex, or creed."[67] The general nature of the statement allowed the Board to operate within a broad framework of educational activities. The "promotion" of education could be interpreted to include both innovative and traditional projects; the references to race, sex, and creed allowed activity in a variety of educational environments. In the early years, this general goal was directed especially to the problems of southern public education and to national problems of higher education.[68]

This general goal, however, was not sufficiently specific to provide management guidelines. The early functioning of a service organization, be it the Girl Scouts, Kiwanis, or a private philanthropic foundation, usually requires a period of looking about for things that need doing. The General Education Board was no exception and in 1903, the objective of that organization beyond the abstraction of promoting education was to discover simply what needed to be done educationally.[69]

In order to discover more about the needs connected with the dominating interests of southern and higher education, surveys were undertaken. The early surveys of the General Education Board began with questions regarding "finance, supervision, school consolidation, Negro education,

etc." The findings of these surveys were recorded in monographs and distributed privately to members of the G.E.B. and stored in the Board's offices.[70] A public report was not issued until 1915.

The surveys, among other things, produced much of the information for choosing institutions for aid according to the likelihood of their success.[71] The surveys also related to the development of a policy for southern education which was consistent with the impetus to provide funds where there was evidence of the "stickative quality." The General Education Board would not attempt to force an outside program for public education on the South for "the public school must represent community ideals, community initiative, and community support, even to the point of sacrifice." The G.E.B. policy was to work cooperatively with local officials. This policy to contribute "by cooperating with Southern leaders in sympathetically working out a program framed by them on the basis of local conditions and local considerations"[72] was also consistent with the public preference (and national constitutional standard) for locally controlled schools.

The Carnegie Foundation for the Advancement of Teaching. The Carnegie Foundation for the Advancement of Teaching was first incorporated by the state of New York under the name The Carnegie Foundation on 8 May 1905

> to establish retiring pensions for the teachers of universities, colleges and technical schools, in the United States, Canada and Newfoundland, and for the purpose of aiding the cause of higher education and removing a source of deep and constant anxiety to the poorest paid and yet one of the highest of all professions.[73]

Although the pension purpose received greatest emphasis, the first charter also stipulated that the income from the $10,000,000 gift be used "to make benefactions to charitable and educational institutions, and generally to promote the cause of science and education."[74]

A minimally revised charter granted 10 March 1906 by the United States Congress changed the name to The Carnegie Foundation for the Advancement of Teaching and more specifically delineated its educational functions, restricting its activities to higher education. But the primary purpose was still to provide retiring allowances to professors of higher education.[75]

Unlike the General Education Board, this foundation had begun with a specific instead of general plan and complications connected with that plan developed almost immediately. The statement accompanying Carnegie's original gift required that the pensions be available to professors of universities, colleges, and technical schools that were neither state nor denominationally controlled. Creating a list of eligible institutions proved difficult with preparatory schools calling themselves colleges, colleges originally sectarian claiming the affiliation had ceased to

influence their operations, universities proving their support was both private and state, etc.[76] Added to the difficulty of developing a fair and definitive list of accepted institutions were questions related to pensions for professors of considerable reputation but employed by institutions not eligible for the "accepted" list.[77] Beyond these more technical problems were philosophical problems related to whether the pensions should be considered a "right," as originally perceived, as a charity, or as funds to which professors would contribute financially during their academic careers.[78]

These conflicts eventually resulted in a separation in the administration of general education projects and the pension plan with the formation of The Teachers Insurance and Annuity Association of America, proposed in the eleventh annual report in 1916, and beginning to issue contracts in March of 1919.[79] This shift from pension plan to an insurance and annuity plan was subject to much controversy, according to the annual reports and to contributors to a collection of criticisms gathered in J. McKeen Cattell's Carnegie Pensions published in 1919. These controversies ranged from accusations of poor financial planning to those of elitist favoritism and of trustees having rescinded Carnegie's original intent for the fund.[80]

The Teacher's Insurance and Annuity Association of America, an organization for which the Carnegie Foundation

provides administrative costs, is still active today. Whether or not it was fairly and justifiably formed will not be settled here. But by providing contributing annuities instead of outright pensions, the Carnegie Foundation plan for professor's retirement allowances did actualize Carnegie's principle that "the main consideration should be to help those who will help themselves."[81]

To create their list of accepted institutions (called "associated" institutions after 1913) from which professors could be eligible for pensions, the Carnegie Foundation had begun studies and surveys to develop definitions of "college" and "university" in 1906. With the 1919 separation of its pension operations from its function "to promote the cause of science and education,"[82] the Carnegie Foundation was able to focus its attention on questions of academic standards and on the broad "division of educational enquiry," which had been established in 1913.[83] But its acting policies remained broad and were not clearly defined during the early years.

Efficiency, Standardized Tests, and Private Foundations

While the Carnegie Foundation and the General Education Board were coping with the difficulties of becoming efficient organizations for giving, uniform, group-administered tests were gradually gaining recognition as efficient

tools for education. Although sometimes called "standardized tests," the late nineteenth century tests that were used to draw conclusions about the amount of knowledge gained by students during specific periods of time only resembled the tests now called standardized. They were uniform tests used to examine large numbers of people who had not necessarily received the same instruction. More often than not, they focused on the information provided in required textbooks.[84] Although they were not standardized or validated in the sense with which those words are now used, their uniformity made it possible for administrators to draw general conclusions about some of the learning that was taking place in schools.

Interest in this tool purported to increase the efficiency of school administration was predictable during a period of national development when confidence in the powers of efficiency was especially high. At the time of early standardized test experimentation, efficiency was considered crucial to the success of almost any endeavor. Technology and efficient business management systems had contributed a great deal to the rapid growth of United States industry in the latter half of the nineteenth century. Both technology and efficiency seemed to catch the imagination of the United States populace. According to Samuel Haber in his book Efficiency and Uplift, the era between 1890 and 1920

> gave rise to an efficiency craze--a secular Great Awakening, an outpouring of ideas and emotions in which a gospel of efficiency was preached without embarrassment to businessmen, workers, doctors, housewives, and teachers, and yes, even to preachers.[85]

In the abstract, efficiency gave life order. Confidence in the ability of the community to provide continuity to the lives of its members had largely disappeared during the 1880s and 1890s.[86] In its place, rules which efficiently managed social and job behavior developed. According to Robert Wiebe in The Search for Order, a new scheme of social organization

> took shape early in the twentieth century. By contrast to the personal, informal ways of the community, the new scheme was derived from the regulative, hierarchical needs of urban-industrial life. Through rules with impersonal sanctions, it sought continuity and predictability in a world of endless change.[87]

Whether or not these "rules" actually filled the gap of the lost sense of community, they did provide, at least temporarily, a sense of order through the roles which they furnished.

Systematic efficiency was a standard consciously maintained by the two foundations. For the founders and trustees of the Carnegie Foundation and the General Education Board, efficiency had very literal significance, for it had trmendous influence on the personal financial success of Andrew Carnegie and John D. Rockefeller. The foundations, too, emphasized efficiency, order, and uniformity in their own management and in the management of the

programs to which they contributed funds. A 1905 Rockefeller contribution of ten million dollars to the General Education Board clearly stipulated that it should be used for the promotion of a "comprehensive system of higher education." Learning the details of the status of higher education required undertaking "systematic studies."[88] To promote both efficiency and fairness, the Carnegie Foundation sought early to establish uniform college entrance requirements[89] which "continued to occupy a large share of the work of the Foundation" for many years.[90] These were given top priority as means to influence the efficiency or "dynamic force" of higher education by Carnegie Foundation president Henry S. Pritchett.

> Other conditions influence the final efficiency or the dynamic force of a college; but after careful study I am convinced that the one condition underlying all of the others is the quality of requirements for admission.[91]

That the foundations from the beginning should use and contribute to the refinement of the efficient educational tools which were standardized tests was perfectly natural pragmatically as well as theoretically. For their "systematic studies," the General Education Board had undertaken extensive surveys of public education. Standardized tests simplified those surveys. Their uniformity made it possible to compare apparent learning in geographic areas with the assumption that noticeable differences in score averages would indicate comparative values regarding

methods of school organization, size of school, school equipment, teacher training, etc.

Standardized tests also simplified the Carnegie Foundation's efforts to improve the quality of college entrance requirements for, potentially, they could provide a uniform standard for judging student preparation for college and for judging student achievement in particular subject areas. Here the use of standardized tests contributed also to the theoretical efficiency which provided people with roles in the new scheme of things. In 1908, Charles W. Eliot, Harvard president and chairman of the Carnegie Foundation board of trustees, spoke of indispensable "layers in civilized society." He felt that the structure of education should appreciate the different forms of schooling appropriate to the different layers.[92] The tests offered an efficient way to identify people "suited" to the top layer of education, thereby giving credence to neo-Darwinism of the period.

Carnegie and Rockefeller foundations contributed to the development and use of standardized tests from the time of their inception. Examination by this writer of treasurer's reports of the Rockefeller Foundation and the General Education Board, 1902 through 1935, revealed over $6,000,000 in appropriations which related either directly or indirectly to standardized test use and development.[93] According to the annual Carnegie Foundation report of 1937,

the Carnegie Corporation of New York between 1915 and 1937 "expended upon thirty-three projects having directly or indirectly to do with examining and testing the round sum of $3,081,600."[94] Exact figures are nearly impossible to report because test development per se was often subordinate, but quite relevant, to the course of educational projects with titles which did not specifically mention test use. Nevertheless, even these general figures give a sense of the extent to which the General Education Board and the Carnegie Foundation used standardized tests to study what appeared to them to be the causes of educational problems and to seek solutions to them.

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[56]Ibid., pp. 661-662.

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C H A P T E R III

THE PROGRESS OF EARLY STANDARDIZED TEST DEVELOPMENT

A look at foundation grants sought and received by one early standardized test developer, Lewis M. Terman of Stanford University, provides a sense of the progression of test development in the United States as well as showing the early growth of the "grantsmanship" process. From the 1910s to well after 1935, much of the work in which Terman was involved was funded by numerous grants from private foundations including the General Education Board and the Rockefeller Foundation, the Carnegie Corporation of New York and the Carnegie Foundation for the Advancement of Teaching. During that time, Terman's work ranged from general interest in the development of standardized intelligence tests, to specific interest in so-called gifted students, to the possibility of hereditary factors which might contribute to what he considered "giftedness."

The following narrative is a report of events which contributed to the framework of principle and process upon which the use of standardized intelligence and achievement tests to evaluate competence still stands. Private foundations eased the course of building that framework. The

choice of Lewis M. Terman to serve as "leading character" was not arbitrary, but to have chosen to concentrate on the efforts of such others as Robert Yerkes of Harvard University or Edward L. Thorndike of Teachers College, Columbia University, would have served the purpose just as well.

Much is implied in these events about which little or no comment has been made. For example, evidence of "academic empire building" is contained in the information but the issue is not discussed. Specific research techniques and motivations which were separate from the proposals made to private foundations have been omitted. Opposing judgments as to the positive and/or negative effects of private foundations on the course of education can be drawn depending on the point of view of the reader. Comments on these and other implications have been limited in order to maintain focus and clarity.

Seeking Funding for the Development of a Mental Measurement Test: 1917-1919

Lewis Terman was one of the major United States importers and translators of Alfred Binet's 1905 intelligence test.[95] He began preliminary work for investigations into the heredity of gifted children by 1914.[96] In 1916, he published The Measurement of Intelligence which included a translated and adapted version of the test developed by Binet.[97] Initial steps of his grant proposal to the

General Education Board to continue this work in 1917 showed that the links that are important to the successful pursuit of funding were already established between the foundation and the proposed research topic. Those steps also showed Terman's recognition of the need for the support of other people in his field of research, and demonstrated his willingness to adapt research purposes to the needs of the funding agency. Terman was committed to the concept of "mental measurement" and pursued research relevant to it throughout his career whether funds were ample or scarce.

In 1917, Terman submitted a proposal for funding of his work in testing to the General Education Board.[98] The proposal was not solicited by them but circumstances preceding it indicated a likelihood of G.E.B. interest. The G.E.B. already had some involvement with the testing movement. Survey work of the G.E.B. had introduced them to testing; the Maryland Survey of Public Schools, for instance, had used standardized tests to measure children's achievements in various subjects before 1915.[99] Even more indicative of General Education Board interest in a proposal such as Terman's, was communicated between G.E.B. secretary Abraham Flexner and Ellwood P. Cubberley of Stanford University which led Cubberley to recommend to Terman that he apply to the G.E.B. for funding. Cubberley was among educators who worked with the General Education Board on an analysis of the "scientific management" administration plan

of the public schools in Gary, Indiana in the latter 1910s.[100]

A June 1915 letter from Flexner to Cubberley stated that the General Education Board was interested in extending its field of work and that Flexner had "one or two projects in mind," that he wanted to discuss with Cubberley.[101] The "projects in mind" were apparently discussed in person and several months later.

A 1917 correspondence from Cubberley to Flexner showed connections between Terman's appeal to the General Education Board and Flexner's interest in extending the G.E.B.'s field of educational research.

> When we were at Gary you told me that you have quite a sum of money for investigations and that, if I had any ideas, to let you know, and perhaps we could do some business. Largely in response to that suggestion I talked over with Dr. Lewis M. Terman this winter the advisability of his applying to your Foundation for a grant of money to enable him to carry out his rather extensive researches necessary to perfect measuring scales for inferior and superior children.

The main function of this letter was to recommend Terman as a "genius at direction and a glutton for work."[102]

On 8 January 1917, Terman appealed to the General Education Board for financial assistance for a five part study in "mental measurement." The appeal was a general one; work in mental measurement was new and Terman was trying to find means of financing that work which he had begun but which he was unable to complete "for lack of money to secure the necessary assistants."[103]

The facets of his study, "named in order according to the urgency with which help is needed," listed interest in research of gifted children second. The various testing research topics for which he sought funding were

1. The elaboration of a new scale for the measurement of general intelligence;
2. Researches [sic] on exceptionally gifted children;
3. The establishment of norms of performance on certain standard tests among various vocational groups;
4. The working out of a separate intelligence scale which can be applied regardless of language difficulties;
5. The relationship of children's school progress to "mental age" norms.[104]

The new intelligence scale "would combine the 'mental age method' of Binet with the advantages of the 'point scale method' preserving [what were from Terman's point of view] the essential features of each." The main costs would be "securing sufficient data for its satisfactory standardization."[105]

The support of known experts in the field was important in achieving foundation funding. During the early months of 1917, the offices of the General Education Board received numerous recommendations for Terman from such people as Robert Yerkes of Harvard, Henry H. Goddard of the Vineland Training School in New Jersey (both of whom were other major developers of the Binet test[106]), Guy M. Whipple of the University of Illinois and the Carnegie Institute of Technology, Charles H. Judd of the University of Chicago, Walter A. Jessup of the State University of Iowa,

Arnold Gesell of Yale University, and Ellwood P. Cubberley of Stanford University.[107] Yerkes noted that Terman's work was "obviously important as well as intimately related to several lines of practical investigation which your Rockefeller Boards have been promoting."[108] All recommended that the General Education Board fund at least some part of Terman's mental measurement work.

Within the framework of the five topics listed, Terman's request was flexible. Researches related to gifted children did not dominate the 1917 proposal; the need for funds did. Details for only the first topic, the development of a measurement of general intelligence, were included in the 8 January letter but Terman was willing to focus on whichever of the five topics the G.E.B. was interested in funding.

> If for any reason the General Education Board does not wish to undertake this one, I shall be glad to outline the others also if there is any possibility of securing favorable action in behalf of any of them.[109]

Flexner's response to that appeal was made on 18 January and was vaguely positive. "I shall be happy to submit to our Committee on Studies your memorandum on the New Intelligence Scale. It might be well if a similar memorandum dealing with the suggestions 3, 4, and 5 were in my hands."[110]

The study of exceptionally gifted children was excluded from consideration for the time being because the

General Education Board was already contributing to "an experiment in the teaching of unusual children."[111] This project was pursued by Dr. Guy M. Whipple while he was Director of the Bureau of Educational Research of the Carnegie Institute of Technology in Pittsburgh.[112]

Before April of 1917, Terman submitted a fourteen-page memorandum detailing his ideas regarding intelligence testing of various vocational groups, the development of an intelligence test not dependent on language skills, and the use of intelligence to determine the extent of "the subject's educational possibilities."[113] Two of the three, like the initial "new intelligence scale" description, emphasized "mental deviations" and their classification.[114]

This was the attitude that eventually led to "tracking," the practice of separating students according to presumed intelligence levels. Terman's appeal stressed that the testing of vocational groups could lead to the use of "mental tests to aid materially in directing the individual towards his proper vocational level," and the results could, among other things, be "an aid to business firms in the selection of employees." The study in "intelligence and school grading" would make possible the use of intelligence tests to determine the grade level in which a child should be placed and to determine the maximum grade level a child could be expected to attain. To clarify the latter point, "data already at hand, for example, indicate

. . . that for an I.Q. of 80, graduation from an average high school is entirely out of the question."[115] At a time when the majority of young people would not attend secondary school anyway,[116] intelligence tests could thus be used as predictive tools. Whether or not this emphasis was consistent with General Education Board thinking was not clearly indicated.

Deciding the conditions for funding. The decisions regarding the funding of Terman's studies in mental measurement was significantly affected by communications between Abraham Flexner of the General Education Board and Robert Yerkes of Harvard. An early Yerkes letter of recommendation for Terman to Flexner (dated 19 January 1917), stated first that Terman "is a fine fellow. I have confidence in his ability, sanity, reliability, and you may be sure that whatever he undertakes will be carefully done, and intelligently."[117]

But Yerkes was doubtful about making too enthusiastic a recommendation for Terman for the simple fact that Yerkes was involved in similar researches which could also use extra funding. His recommendation therefore was tempered with statements regarding his being unable to recommend Terman's idea of combining the mental age and point-scale method because it was his "careful consideration . . . that the age arrangement of tests as made by Binet and as

accepted by Terman, Goddard, and others, is scientifically unsatisfactory."[118]

Yerkes was also concerned with practicality and one emphasis was getting standardized inteligence tests into common use. It seemed to him "that at the present time it is scarcely desirable for any board to further both [his and Terman's] investigations, since by so doing two diverse and in a sense competing series or sets of methods would be presented for practical use."[119]

The letter's concluding paragraph, however, offered a solution to these conflicts:

> Were it possible for Terman and me to cooperate in this work, I should be most willing and indeed enthusiastic in the matter, for I believe that we could resolve our disagreements of opinion and hasten the development of highly serviceable methods of examining.[120]

One day later, this letter was followed by a second, stimulated by Yerkes' growing enthusiasm with the idea of working with Terman. "You, [Flexner,] by means of your financial lever, could bring us together, and I have confidence that I could manage the human engineering end of it, although that might appear rather delicate."[121]

The cooperative plan, which almost reached completion, for a project dealing with Terman's first priority, that is, "the elaboration of a new scale for the measurement of general intelligence" to be standardized on a large scale, seems to have been dominated by Yerkes.

Another Yerkes letter to Flexner dated 23 January 1917, stated that

> My idea would be to have a small working committee which might associate with itself advisory members, up to the number of perhaps five, that then such a board might in connection with my proposed survey plan to try out methods, select, standardize, and in general accumulate materials for norms, I believe a bully plan could be worked out, . . .[122]

When the Yerkes/Terman collaboration finally did take place, the plan for using a small committee was followed.

The personal as well as professional relationship between Yerkes and Flexner revealed in the frequent correspondence between them in 1917 probably contributed to Yerkes' openness about his continued reservations about Terman. In spite of those reservations, correspondence in March, following Flexner's having sent the Terman papers to Yerkes for further evaluation by him, indicated the probability of Terman and Yerkes working together.

> One thing that discourages me a little is that [Terman] is asking for so many different things at once and for amounts of money that vary all the way from a thousand to a hundred thousand dollars [sic]. Certainly he has not been accustomed to dealing with business men or he would not say to you, "If you don't care to give me what I need, give me what you choose and I shall use it to advantage."[123]

Flexner, however, was not so concerned with Terman's lack of business sense. His response to Yerkes was that he had "learned in dealing with these somewhat unexperienced academic folk not to expect too much of them on the business side of things. We take them at their best."[124]

Apparently realizing that the most probable future for early funding of any part of his original proposal lay in collaboration with Yerkes, Terman nevertheless held to advancing his own points of view. A letter to Yerkes dated 29 March 1917 stated

> My idea would be to work out something entirely new, --a system of tests which would be original, fundamental, and convenient to use; one which would combine all the advantages of the point scale and the mental age method. . . .

The same letter indicated that Terman was aware that he would not direct the cooperative project.

> I shall appreciate it if you will give as definite indication as possible of the part you think I should play in the investigation. I am assuming, of course, that I should be an equal partner in it.[125]

On 2 April 1917, Flexner notified Terman that his Stanford-based testing investigation would not be funded, and suggested that he should work out a joint proposal with Robert Yerkes.[126]

Yerkes notified Flexner on 5 April that a joint "cooperative plan" from Terman and him was probable but that he did not presume that G.E.B. support for the plan was assured. He considered Flexner's suggestions important, noting that, he would, "of course, be greatly obliged for any suggestions you may care to give about further procedure in this matter."[127]

But as events and conditions affected Terman's hope to pursue independent, Stanford-based research which would include that of gifted children, current events affected the plan for collaborative work on a new scale for the measurement of the general intelligence of school children. On 6 April 1917, Congress declared war on the Central Powers of Europe.

"Politics makes strange bedfellows." Without a doubt, both Terman and Yerkes were strongly interested in the development of improved intelligence tests. Their "styles," however, were quite different. In January of 1917, Yerkes wrote Flexner that he stood "ready to help in any way that I can, although as I told you before, I don't want to sacrifice anthropoid opportunities for anything so commonplace as human education!"[128] Whether this reflected Yerkes' sense of human or that his interest in education was only secondary, this writer has not determined. But in the light of his attitude at the encroachment of war and finally, the declaration of war, a contrast in Yerkes' and Terman's attitudes toward that research in the short and long range becomes obvious:

References to the coming of war had been made by both Yerkes and Flexner in the series of correspondences between them and Terman which began in January 1917; Terman made no references to it even after 6 April. Letters between Flexner and Yerkes showed concern and excitement over

the prospect of the United States becoming involved in World War I. For instance, Yerkes closed the 5 April letter with "I hope that to-day our Congress may definitely and unanimously decide on war, so that we may have to the utmost the moral effect on Germany as well as on the Allies." Less than two weeks later, Yerkes' interest in educational testing unquestionably became secondary to what he saw as the needs of the moment. Another correspondence on the 17th informed Flexner that he had become

> engrossed with the relations of psychology to military affairs and am doing my utmost to organize our psychological resources in the interests of civilization. . . . matters educational will have to be neglected for the present.[129]

Terman's correspondences, on the other hand, showed concern only for the testing project being considered. His letters did not even mention the possible onslaught of war and would the tentative plan of collaboration between him and Yerkes not materialize, Terman would "expect to go about the task I have in mind anyway, be the available funds large or small."[130] Even after United States involvement in the war became fact, his interests remained devoted to the mental measurement project, with or without the war, whether or not he were the agent to pursue it. He was "much more anxious that the research be made than that I should conduct it."[131] His long-term pursuit of that research became proof of his dedication to it. In the

short-range, however, he too became involved in the war effort.

A New Scale for Mental Measurement --The Army Intelligence Tests

The matter of developing and standardizing a new scale for mental measurement was pursued, but under circumstances not predicted by the tentative plans laid down by Terman, Yerkes, and the General Education Board before war was declared. The "relations of psychology to military affairs" in which Yerkes had been engrossed a week after war was declared resulted in his becoming Chairman of the Committee on the Psychological Examination of Recruits of the Council of the American Psychological Association.[132] Working through the National Research Council,* this work resulted in a new scale for mental measurement, but for military personnel instead of for school children.

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*The National Research Council was organized as a branch of the National Academy of Sciences in 1916 to coordinate United States research agencies so that they might be better utilized under either peace or war conditions. Like universities, they were to become an administrative organization through which foundations would make frequent appropriations for a wide variety of studies. They also would involve themselves more directly in research--for example, the "Conference Upon the Problem of the Unusually Gifted Student" in December of 1921. George Ellery Hale et al., "The National Importance of Scientific and Industrial Research," Bulletin of the National Research Council I (October 1919):1-21 passim; and Rockefeller Archives, File "National Research Council," Record Group 536, Box-266/2746.

These "mental measurements" became known as intelligence tests; the purpose was to classify two million army recruits, most of whom lacked previous military training or experience.[133] Barely two months after the United States declared war, Yerkes

> and Terman, together with five colleagues, had produced what they considered reputable and workable products: "examination a," a test for literates, and other examinations for those who could not read English.[134]

Early in 1918, modifications of these "workable" examinations, based on the trial testing of over 80,000 men, became the "alpha" and "beta" tests of intelligence.[135]

Yerkes later described the principal military applications of those tests as follows:

> (1) rejection or discharge of very low-grade men; (2) assignment of low-grade men to labor battalions; (3) selection of high-grade men for officers' training schools and non-commissioned officers' training schools; (4) the assignment of men so that organizations should have either equal mental strength or specified mental strength; (5) partial basis for assignment, promotion, or demotion of young officers.[136]

Yerkes had considerable faith in the accuracy of the alpha and beta intelligence tests.

The testing movement gains momentum. History generally marks the beginning of the testing movement by the alpha and beta intelligence testing of approximately 1,750,000 men which resulted.[137] That massive testing gave a commonness to the experimental technique of group administered standardized testing. Prior to the war, the

standardized test experience was limited to a relatively small number of special interest groups taking standardized "achievement" tests. Their use was restricted predominantly to those seeking college admissions and those involved in educational surveys. The broad use of the alpha and beta tests during World War I by thousands of citizens from every walk of life gave both standardized tests and standardized intelligence tests the acceptance of familiarity.

Before military sanctioned use of the tests during World War I, the concept of intelligence tests was not well-received. Presuming to measure something as intangible (and for some, probably, as nearly divine) as the mind was regarded as absurd.

> Outside the profession [of psychology], in education and industry, mental tests usually met with skepticism, if not outright hostility. . . . Perhaps Justice John W. Goff of the New York Supreme Court voiced the general opinion of the informed public when he refused [in the 1910's] to admit the results of a Binet test as evidence of feeblemindedness. "Standardizing the mind is as futile as standardizing electricity," Goff admonished.[138]

Neither had the military accepted the tests with open arms. The process of using the tests to eliminate the "unfit" seemed unnecessary to regular medical officers, part of whose jobs it remained to eliminate such people through psychiatric examinations. Some officers resented the program on the grounds that "the psychologists had made the army a laboratory for their own purposes."[139] And given the plans that had developed between Terman,

Yerkes, and the General Education Board immediately preceding the war, that accusation might well have been at least partially justified.

In addition, the program challenged the military's traditional methods of judgment[140] and had been applied at the instigation of an outsider. Although Yerkes carried the rank of Colonel at the end of the war,[141] he was not "regular Army." And "because Yerkes commanded the operation, it remained identified as an extra-military enterprise." After the armistice, the program was essentially eliminated from military procedure.[142]

In spite of some unfavorable judgments, the testing program had been useful to the army, especially in helping to classify personnel and in selection of men for officer training.[143] Even more significantly, "the wide use of examinations during the war had dramatized intelligence testing and made the practice respectable. Gone were the public's prewar wariness and ignorance of measuring intelligence."[144]

The National Intelligence Test

Following the Armistice in November of 1918, the development of the National Intelligence Test, a standardized intelligence test for school children emanating from the wartime tests, was rapid. By mid-January 1919, although he was still attached to the war department, surgeon

general's office, Yerkes was aware that his testing program would not be continued in any major way with the peacetime army.[145] Speaking for Terman and himself, Yerkes corresponded with the General Education Board on 17 January 1919 regarding picking up the collaborative project with Terman that had been interrupted by the war. The publicity of the wartime program and the development of the easily administered short answer, group examination had created a demand for access to the tests by schools.

> Already we are bombarded by requests from public school men for our army mental tests in order that they may be used in school systems. The methods as they stand are not suitable. A somewhat different type of group examination should undoubtedly be developed. During the next few months in ten, twenty, or fifty different cities, methods will be developed, some of which will undoubtedly be either bad or indifferent because there are relatively few technical experts in this field.[146]

Yerkes and Terman regarded expert adaptation of the test a crucial consideration for maintaining the positive momentum that wartime use had initiated and for upholding the principle of efficiency. The letter asserted that Terman and Yerkes were

> convinced that it would be extremely undesirable to let matters take this [inexpert] course, since a great deal of time would undoubtedly be lost and there will be grave danger of a serious reaction against mental measurements because of the employment of poor procedures.[147]

If the prewar plan were to be initiated, its "chief purposes" would be to secure "adequate psychological, educational and sociological data for the preparation

and standardization of methods of rating and grading children in the public schools." Yerkes proposed that a committee of five men meet "to prepare a suitable method for the mental rating of school pupils of third to eighth grades inclusive. (Our off-hand suggestions for this group would be Haggerty, Terman, Thorndike, Whipple, Yerkes.)"[148] This assemblage should occur soon enough that a trial of the tests might be made by the fall of the same year. On 23 January, Terman and Yerkes jointed requested $25,000 from the General Education Board to pursue the project.[149]

Correspondence between the time of the proposal and the March appropriation gave a clearer notion of the purposes of the project. Flexner was interested in the practical applicability of the project and in the methods for validating material.[150] Separate responses by Yerkes and Terman showed subtle differences in their approaches, Terman, in this writer's judgment, being the more devotedly academic.

According to a February 1919 letter, the "essential points" of the plan from Yerkes' point of view would result in the predetermination of children's educational futures. The new test would make possible the

> (1) Mental classification of children so that they may be permitted and required to progress educationally, in accordance with their ability.
> (2) Segregation of children after the first five or six years of elemental work and the establishing of at least three radically different types of instruction.[151]

A separate letter from Terman to Flexner stressed the desire for proper and careful standardization, pointing out methods that were being used by graduate students of Stanford who had been working with intelligence tests before and during the war. Standardized tests were used to pick cases of "exceptional children, both gifted and subnormal." Care was being taken "to check up the validity of the tests by finding out how well they agree with the child's school performance." The letter concluded by emphasizing the frustration of researchers at Stanford at having to interrupt their study of pupils to devise and improve the methods of testing, and by stressing that Yerkes' and Terman's interests were "not chiefly academic or theoretical."[152]

1 March 1919, Flexner notified Yerkes that the General Education Board Executive Committee had approved an appropriation of $25,000 for

> financing the preparation of mental measurement of school children, provided the undertaking is organized and conducted by a competent and responsible agency. . . . [These] terms . . . would be met, provided the National Research Council officially made application for the appropriation, the work to be done by you, Dr. Terman, and your associates.[153]

Formal notification of the appropriation was sent to Dr. George E. Hale of the National Research Council on 13 March 1919.[154] The function of the National Research Council was administrative, not active.

The process was quick. The committee, consisting

of the five "off-hand suggestions" made in the January letter, began meeting for the purpose of developing intelligence tests for school children on 28 March 1919.[155] During May and June of that year, 5,000 children were given trial examinations. Ten alternative forms for each of ten tests had been selected for use with plans for the immediate publication of five forms of each by the end of 1919.[156] The project was completed by 1921 and resulted in what came to be known as the National Intelligence Test.

The committee. The men assembled to devise the National Intelligence Test were Terman, Yerkes, M. E. Haggerty of the University of Minnesota, Guy M. Whipple of the University of Illinois, and Edward L. Thorndike of Teachers College, Columbia University. None was new to either testing or work with private foundations. All had participated in the preparation of the army intelligence tests.[157]

M. E. Haggerty's work was associated with both the General Education Board and the Carnegie Foundation, spanned at least three decades, and related to work beyond as well as including testing. In 1917, he was involved in work with Yerkes in Minnesota.[158] In 1919, he was appointed to take charge of the Division of Tests and Measurements of the State Survey Commission of Virginia, under an appropriation of the General Education Board.[159] The 1930s association with the Carnegie Foundation included the direction

of a study of problems of colleges and universities (which included "college examinations") beginning in 1930, direction of research into the validity of psychological and educational assumptions in art education beginning in 1932, and direction of a study of graduate instruction beginning in 1936.[160]

Guy M. Whipple of the University of Illinois and for a brief period, director of the Bureau of Educational Research of the Carnegie Institute of Technology,[161] had been the recipient of a General Education Board appropriation in 1916 for a study of gifted children. This grant, in fact, was one reason Terman had not been able to interest the General Education Board in that segment of his 1917 proposal for the development of mental measurements.[162] The Whipple study made use of group administered intelligence tests and concluded, among other things, that intelligence tests were more accurate in selecting gifted students than were class records and teachers' impressions. Work during the 1920s was concentrated in school curriculum development.[163]

Edward L. Thorndike was a prominant leader in the testing movement who developed standardized tests with purposes ranging from the measurement of reading ability to vocational aptitudes to general intelligence.[164] His reading scale was used for General Education Board state surveys such as those in North Carolina and Virginia. Statistics

emanating from his mental measurement and vocational guidance tests contributed to a National Research Council 1921 Conference on the Unusually Gifted (sponsored in part by the G.E.B.).[165]

Thorndike's working relationship with the Carnegie foundations went beyond the receiving of grants to one of trusted researcher and advisor. For example, a 1916 resolution authorizing a small grant to the New York Committee on Feeble-Mindedness included the notation that "in the opinion of the [Carnegie] Corporation this work would be strengthened by bringing into association with the Committee such specialists in the field of psychology as E. L. Thorndike. . . ."[166] A 1923 grant to the "Committee in charge of the Special Class for Gifted Children, Public School 165, New York" was gained partly because Thorndike "heartily endorses this effort [and] has also given most generous assistance to it."[167] A 1931 grant to the University of California for research into the genetics of maze learning ability in rats was gained in part by Thorndike's endorsement. This project's funding was extended in 1934 when Thorndike responded positively to a letter from Carnegie Corporation president, Frederick Keppel, which stated that Keppel would "be inclined to continue the present arrangement for a year or so if you think the work is really important."[168]

Funding Terman's "Investigation of the Heredity of Gifted Children"

In spite of the interruption created first, by the preference of the General Education Board for conditions for funding, and, second, by World War I, Lewis Terman's interest in the study of gifted children had not waned. Stanford University, with which he was associated, had consistently provided some limited support for the studies and investigations of what were considered intellectual differences and gifted children. These had been continued by graduate students during Terman's wartime absence.[169]

In 1921, $12,900 of foundation funding was provided by the Commonwealth Fund* for Stanford University "to permit Professor Lewis M. Terman to develop a study of a selected number of gifted children in California." The same fund provided additional smaller amounts until 1929.[170] The grants were a part of an educational research program pursued by the Commonwealth Fund from 1921 to 1927. Major fields pursued under the program were finance, curriculum, reorganization, and individual differences among pupils.[171]

Terman's project related to curriculum as well as to individual differences. One of its most important features, from the point of view of the Commonwealth Fund,

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*The Commonwealth Fund, initiated by a gift of Mrs. Stephen V. Harkness, was incorporated 17 October 1918. Since the late 1920s, research through this fund has been concentrated in health topics, including one called child guidance.

> was the fact that in accordance with the original agreement, Stanford University has now established a research assistantship for the sole purpose of following the careers of the selected children for as many years as may be necessary to determine whether or not the basis of selection is justified by subsequent developments [,] and in what way the education of such children may be modified to advantage.

The Fund was apparently confident that intellectual superiority was an identifiable trait, and that the specialized education of people thus identified was important to national welfare.

> . . . the ultimate purpose of [Terman's] investigation is to establish a reliable foundation of fact on which plans for the education of the intellectually superior child may be based. . . . [It] is regarded by those who have followed the progress of the work as "one of the most significant ever made anywhere, viewed either as a problem in education or as a problem of national welfare."[172]

The title of the volumes resulting from this study was Genetic Studies in Genius; the emphasis of the study was "the nature of genius, insofar as this is indicated by the mental and physical traits of intellectually superior children."[173] Intelligence and other standardized tests and the help of interested funding agencies made it possible for Terman and his co-workers to gather large amounts of information on more than 1,300 children. Data collected for over 800 children identified as gifted and 500 control group children included a wide variety of tests.[174]

Among the tests used to identify those who would be considered "gifted" or merely "average" were the National Intelligence Test, the Stanford-Binet Intelligence Test,

the Stanford Achievement Test, "a battery of seven 'character' tests (bearing on such traits as honesty, tendency to over-state one's ability or knowledge, moral judgment, and social attitudes)," and an "objective test of interest." Also included were anthropometric measurements, medical examinations, and, for the experimental group, the Whittier Scale for Home Grading.[175] Thus were the characteristics that seemed important in choosing those who should receive special, advantageous education determined.

Utilizing the data. Emphasis on hereditary factors in human intelligence increased as the project progressed and the fact of the mass of previously gathered data became one rationale for continuing the project through follow-up studies. By Terman's 1923 estimate, the "heredity data on a group of this type would be of such extraordinary value that it would seem almost a tragedy if the present opportunity were allowed to pass."[176]

Follow-up studies of the original project occurred into the 1950s for a total cost of close to $250,000 through grants and "anonymous gifts."[177] These studies re-established contact with subjects in the original study for such purposes as re-testing (in part to identify cases of "deteriorated" intelligence),[178] the acquisition of achievement test scores, and for the investigation of educational progress, vocational plans and achievements, social and

personality traits, and health histories. Siblings of and eventually children of the original subjects were also variously measured.[179]

The first follow-up study was financed in part by the Commonwealth Fund.[180] Another in 1938, which followed a letter from Edward Thorndike to Terman offering "to make every effort to help get money for it,"[181] was assisted by $26,000 from the Carnegie Corporation. A third follow-up, assisted by a combined figure of nearly $40,000 from the Carnegie Corporation and the Rockefeller Foundation, occurred between 1946 and 1951.[182]

The momentum behind these various grants had been established by 1920. The momentum that accompanied popular acceptance of the standardized intelligence tests upon which the selection of the subjects for Terman's study had been based, had also been established by 1920, more than thirty years earlier.

Reference Notes

[95]Kamin, p. 5.

[96]Lewis M. Terman and Truman L. Kelley, "Proposed Investigation of the Heredity of Gifted Children," 1 June 1923, File "Study of Gifted Children," Carnegie Corporation of New York, New York, New York.

[97]Terman, The Measurement of Intelligence (Boston: Houghton Mifflin, 1916).

[98]Terman to Abraham Flexner, 8 January 1917, Box 308/3223, Record Group 697, Rockefeller Archives.

[99]Rockefeller Archives, File "Maryland Survey of Public Education, 1915-1923," Record Group 629, Box 276/2881.

[100]Annual Report, G.E.B., 1914-1915, p. 44; and Annual Report, G.E.B., 1917-1918, pp. 23-29.

[101]Flexner to Ellwood Cubberley, 23 January 1915, Box 653/6806, Record Group 2301, Rockefeller Archives.

[102]Cubberley to Flexner, 2 April 1917, Record Group 2301, Box 653/6806, Rockefeller Archives.

[103]Terman to Flexner, 8 January 1917, Box 308/3223, Record Group 697, Rockefeller Archives, p. 1.

[104]Ibid., p. 2.

[105]Ibid., p. 3.

[106]Kamin, pp. 5-6.

[107]Rockefeller Archives, File "Stanford University," Record Group 2301, Box 653/6806; and Rockefeller Archives, File "National Research Council, Mental Measurements, 1917-1942," Record Group 697, Box 308/3223.

[108]Robert Yerkes to Flexner, 19 January 1917, Box 308/3223, Record Group 697, Rockefeller Archives, pp. 1-2.

[109]Terman to Flexner, 8 January 1917, Box 308/3223, Record Group 697, Rockefeller Archives, p. 4.

[110]Flexner to Terman, 18 January 1917, Box 308/3223, Record Group 697, Rockefeller Archives.

[111]Ibid.; and Annual Report, G.E.B., 1917-1918, p. 39.

[112]Annual Report, G.E.B., 1917-1918, p. 39.

[113]Terman, "Additional Memoranda," Box 308/3223, Record Group 697, Rockefeller Archives, p. 8.

[114]Terman to Flexner, 8 January 1917, Box 308/3223, Record Group 697, Rockefeller Archives, pp. 2-3.

[115]Terman, "Additional Memoranda," pp. 3, 2, 8-10, 8-9.

[116]For a discussion of this matter, see Chapter IV of this manuscript.

[117]Yerkes to Flexner, 19 January 1917, Box 308/3223, Record Group 697, Rockefeller Archives, p. 1.

[118]Ibid., pp. 1-4, 2.

[119]Ibid., p. 3.

[120]Ibid., p. 4.

[121]Yerkes to Flexner, 20 January 1917, Box 653/6806, Record Group 2301, Rockefeller Archives.

[122]Yerkes to Flexner, 12 March 1917, Box 653/6806, Record Group 2301, Rockefeller Archives.

[123]Yerkes to Flexner, 12 March 1917, Box 653/6806, Record Group 2301, Rockefeller Archives.

[124]Flexner to Yerkes, March 1917, Box 653/6806, Record Group 2301, Rockefeller Archives.

[125]Terman to Yerkes, 29 March 1917, Box 653/6806, Record Group 2301, Rockefeller Archives, pp. 1, 2.

[126]Flexner to Terman, 2 April 1917, Box 653/6806, Record Group 2301, Rockefeller Archives.

[127]Yerkes to Flexner, 5 April 1917, Box 653/6806, Record Group 2301, Rockefeller Archives.

[128]Yerkes to Flexner, 23 January 1917, Box 653/6806, Record Group 2301, Rockefeller Archives, p. 2.

[129]Yerkes to Flexner, 5 April 1917, Box 653/6806, Record Group 2301, Rockefeller Archives, p. 2; and Yerkes to Flexner, 17 April 1917, Box 653/6806, Record Group 2301, Rockefeller Archives.

[130]Terman to Yerkes, 29 March 1917, Box 653/6806, Record Group 2301, Rockefeller Archives.

[131]Terman to Flexner, 18 April 1917, Box 653/6806, Record Group 2301, Rockefeller Archives.

[132]Daniel J. Kevles, "Testing the Army's Intelligence: Psychologists and the Military in World War I," Journal of American History 55 (December 1968):566.

[133]Tyler, Perspectives on American Education, p. 28.

[134]Kevles, p. 568.

[135]Ibid., pp. 571-572.

[136]Yerkes to Flexner, 13 February 1919, Box 308/3223, Record Group 697, Rockefeller Archives.

[137]Kevles, p. 573; Clarence J. Karier, "Testing for Order and Control in the Corporate Liberal State," in Karier, Raul C. Violas, and Joel Spring, Roots of Crisis: American Education in the Twentieth Century (Chicago: Rand McNally College Publishing Company, 1973), p. 112; and Tyler, Perspectives on American Education, p. 28.

[138]Kevles, p. 566; John W. Goff quoted from Literary Digest, 19 August 1916, p. 405.

[139]Kevles, p. 574.

[140]Ibid., p. 575.

[141]Kamin, p. 19.

[142]Kevles, pp. 578-579.

[143]Ibid., p. 573; and Ralph W. Tyler, "Advantages and Disadvantages of Standardized Testing," address given at University of Massachusetts, Amherst, Massachusetts, 27 March 1979.

[144]Kevles, p. 580.

[145]Ibid., p. 578.

[146]Yerkes to Flexner, 17 January 1919, Box 308/3223, Record Group 697, Rockefeller Archives, p. 1.

[147]Ibid.

[148]Ibid., pp. 1-2.

[149]W. W. Brierley to Yerkes, 19 April 1941, Box 308/3223, Record Group 697, Rockefeller Archives.

[150]Flexner to Yerkes, 5 February 1919, Box 308/3223, Record Group 697, Rockefeller Archives; Terman to Flexner, 7 February 1919; Flexner to Terman, 11 February 1919; and Yerkes to Flexner, 13 February 1919.

[151]Yerkes to Flexner, 13 February 1919, Box 308/3223, Record Group 697, Rockefeller Archives.

[152]Terman to Flexner, 7 February 1919, Box 308/3223, Record Group 697, Rockefeller Archives, pp. 1-2.

[153]Flexner to Yerkes, 1 March 1919, Box 308/3223, Record Group 697, Rockefeller Archives.

[154]Brierley to Yerkes, 19 April 1941, Box 308/3223, Record Group 697, Rockefeller Archives.

[155]Yerkes to Flexner, 13 March 1919, Box 308/3223, Record Group 697, Rockefeller Archives.

[156]Yerkes, "Report of Committee on Preparation of Intelligence Tests for Elementary Schools," 17 December 1919, Box 308/3224, Record Group 697, Rockefeller Archives, p. 1.

[157]Annual Report, G.E.B., 1918-1919, p. 39.

[158]Yerkes to Flexner, 20 January 1917, Box 653/6806, Record Group 2301, Rockefeller Archives, p. 2.

[159]Annual Report, G.E.B., 1918-1919, p. 29.

[160]Carnegie Foundation, Twenty-Ninth Annual Report, 1934, pp. 68, 71; and Carnegie Foundation, Thirty-First Annual Report, 1936, p. 80.

[161]Annual Report, G.E.B., 1917-1918, p. 39.

[162]Flexner to Terman, 18 January 1917, Box 308/3223, Record Group 697, Rockefeller Archives; and Annual Report, G.E.B., 1917-1918, p. 39.

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[168]Thorndike to Frederick Keppel, 19 November 1930, File "Genetics of Maze Learning Ability," Carnegie Corporation; and Executive Committee, Agenda and Minutes, 22 September 1931, Carnegie Corporation, p. 43; Keppel to Thorndike, 16 October 1933, File "Genetics of Maze Learning Ability," Carnegie Corporation; and Thorndike to Keppel, 18 October 1933, File "Genetics of Maze Learning Ability," Carnegie Corporation.

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[170]Commonwealth Fund, Fourth Annual Report, 1921-1922, p. 41; and Terman, ed., Genetic Studies in Genius, 5 vols. (Stanford, California: Stanford University Press, 1925, 1926, 1930, 1947, 1969), vol. 5: The Gifted Group at Mid-Life: 35 Years' Follow-up on the Superior Child, p. v.

[171]Commonwealth Fund, Fourth Annual Report, 1921-1922, p. 42.

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[173]Terman, Genetic Studies in Genius, vol. 1: Mental and Physical Traits of a Thousand Gifted Children, p. viii.

[174]Terman and Truman L. Kelley, "Proposed Investigation of the Heredity of Gifted Children," 1 June 1923, File "Study of Gifted Children," Carnegie Corporation, pp. 2-3.

[175]Ibid.

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[177]Terman, ed., Genetic Studies in Genius, 5:v.

[178]Terman, ed., Genetic Studies in Genius, vol. 3: The Promise of Youth, Follow-up Studies of a Thousand Gifted Children, chap. 9 passim.

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[180]"Record of Grants to Terman," File "Stanford University Study of Gifted Persons," Carnegie Corporation.

[181]Thorndike to Terman, 15 June 1938, File "Stanford University Study of Gifted Persons," Carnegie Corporation.

[182]"Record of Grants to Terman," File "Stanford University Study of Gifted Persons," Carnegie Corporation.

C H A P T E R IV

CONTINUATION IN A CHANGING ENVIRONMENT

The enthusiastic acceptance of standardized tests by educators and the public after World War I was followed by the development of increasing numbers of standardized tests for wider varieties of purposes. That development was based on a conviction that the measurement of possible differences in the intelligence and in the creative talent of individuals was important to education and to society, and on a conviction that standardized tests were a reliable method for doing so. In educational projects sponsored by the Carnegie and Rockefeller foundations, the validity of specific tests was frequently questioned. But the validity of their function in identifying fine distinctions in levels of learning and innate abilities was rarely questioned.

The Carnegie and Rockefeller foundations influenced the increase in standardized test use in United States education by providing a wide variety of grants for the development of uniform intelligence and achievement tests. Through the nineteen-teens, twenties, and thirties, numerous grants were made for the study, improvement, and validation of existing tests and examinations in use both in

the United States and in Europe. That foundations endorsed the continuing development of standardized tests is evidenced by references to test use and development in the annual reports and in preserved records and documents. Foundations also provided grants for analyses of the theory and practice of measurement and for the development of cumulative record systems which used test data. Curriculum development projects and state educational surveys were contexts in which grants of the Rockefeller organizations relating to test development often occurred.

Historical Context

The foundations were not the sole influences for uniform, standardized tests becoming ordinary components of education in the United States. The initial development of uniform, group-administered tests suited the circumstances which were influencing the nation's overall development. When integrated with the new sciences of statistics and psychology, they were a compatible development during those decades when the ideals of scientific management were applied to nearly every American institution. The tests' capacity for simplifying and systematizing record-keeping made them tools for the efficient management of educational institutions. As such, they also seemed to advance the goal of universal education.

An aid toward the goal of universal education. The concept of universal education was broadly accepted long before the turn of the twentieth century but its realization was not easy.[183] Efforts to push its progress had resulted in compulsory education laws by the mid-nineteenth century. Enforcement of these laws was made difficult by the same realities that preceded their existence. The indirect financial cost to parents of putting children in school instead of to work often made schooling impractical or even the cause of hardship. Teachers and administrators were often hesitant to attempt to teach children whom they feared would not easily adapt to classroom discipline. Most significantly, however, there were simply not enough school facilities to accommodate all children.

At the turn of the century, compulsory education laws became more enforceable. This became a possibility with the growth of labor unions, a growing public acceptance of "school by compulsion," and belief on the part of many educators and industrialists in the need for "Americanization" experiences for the children of immigrant parents.[184] Enrollment increased. Additional facilities were built to accompany larger school populations. Between 1890 and 1918, there was, on the average, more than one new high school built for every day of the year.[185]

Increasing enrollment contributed to the problem of "over-aged" students--students who were several years older

than their conventional-aged classmates. Many students did not matriculate yearly from grade to grade with the regularity now taken for granted. Irregular attendance and late entrance were among the many reasons some students would be held back repeatedly or be consistently three or four years older than deemed appropriate. Student retention in the same grade for more than one year was an inefficient use of limited classroom space and cost additional teacher salaries.[186] The use of uniform tests contributed to the practicability of universal education by helping to adjust the placement of these students.

Conceptions of schooling were changing and increasing enrollment was one factor which made the inflexible curriculum and standards for promotion of the nineteenth century less acceptable to professional educators and the general public in the twentieth century. A differentiated school structure which divided children on the basis of "brightness," that is, tracking, was one means of adapting schools to the increasing heterogeneity which accompanied increasing numbers of students.[187] The development of "scientifically objective" standardized intelligence tests made the concept of differentiated school structures as a solution to the problems of rapidly growing student enrollment seem even more viable. "Better testing would allow [schools] to perform their sifting scientifically."[188]

Advancing non-educational purposes. During the period of their early development, standardized tests often served social and political purposes apart from education as well as serving such purposes through education. Americans, while still inclined to espouse egalitarian ideals, had developed social and economic classes. The certification of certain intellectual differences by the "objective" National Intelligence Tests, released to public schools in 1919, helped support the notion of a meritocratic society in which supposedly only persons of "superior capacity" reached profitable social and corporate positions.[189] By "scientificating" distinctions between the gifted, the bright, and the average, the tests fueled the arguments of neo-Darwinists by seeming to validate the theory of survival of the fittest applied to individuals. The status of those arguments gained renewed force when scores of the army Alpha tests (on which the National Intelligence Test was based) correlated well with the status and income of pre-induction occupations.[190] The pattern continued when the tests were put to school use; students who scored well on the school intelligence tests were often the children of professionals and business people.[191]

The tests were also able to serve as "scientific instruments" for helping to justify Congressional actions in 1921 and 1924 which restricted further immigration from nations not already well-represented in the national

population. "Scientific" testimony of Dr. H. H. Laughlin, "Expert Eugenics Agent" of the House Committee on Immigration and Naturalization of the United States Congress, was closely attended at Congressional immigration hearings.[192] Laughlin was also secretary of the Eugenics Research Association and staff member of the Carnegie Institution in Washington.

Laughlin's testimony was based largely on the conclusions of intelligence tests, including the Alpha and Beta tests used during World War I, in regards to the comparative intelligence of different nationalities as measured by the tests. The immigration act of 1921 provided that the number of immigrants admitted from any given country could not exceed three percent per year of the number of nationals resident in the United States at the time of the 1910 census. In 1924, that percentage was reduced to two percent and the census year on which it was based was moved back to 1890, thus restricting immigration from the nations that had only recently begun to emigrate, those of southern and eastern Europe, still further.[193]

Standardized tests proliferate. By the mid-twenties, a place for standardized tests in education had been clearly established. Prior to the development of the Alpha and Beta tests during World War I, development of "mental tests" was inhibited by skepticism, and the use of standardized

achievement tests was restricted to special and to collegiate studies. Favorable publicity during the war about the use of the army tests gave standardized intelligence tests a commonness and acceptability.[194] By 1925, the concept of standardized tests in general gained popular approval and they proliferated.

As the tests proved their usefulness to teachers and administrators in what was becoming the nation's "system of education," more and more educational applications for standardized tests were sought. Standardized tests had already helped serve to advance the cause of universal education. They entered a new phase of development at about the same time that the rate of increasing enrollments allowed educators to predict that the cause of universal education was about to be realized. Some people desiring a better understanding of the human mind had great confidence in the tests' potential for objectifying learning and human abilities. Already useful for "tracking" students and simplifying student and teacher evaluations, tests seemed to be tools that could also be used for the measurement of heretofore illusive qualities such as creativity, vocational aptitude, and personality.

This is not to suggest, however, that this phase of standardized test development was to proceed without scrutiny. With familiarity came a sophistication about the shortcomings of tests which researchers were often forced

to take into consideration. This is evidenced by the progress reports of some of the educational research projects discussed later in this chapter. But in spite of increasing awareness of possibilities of misinterpreting tests and of the complexities of human intelligence, the tests had found their niche in the United States educational system and schools continued to use them to make discriminations about the types of schooling that would be provided for different pupils.[195]

Enthusiasm for the trends that accompanied the initial development of standardized tests--scientific management, toward the end of the 1910s; neo-Darwinism toward the mid-twenties--had begun to dissipate. Naturalism, too, became less attractive. As the United States entered the economically depressed 1930s, the fatalism of naturalism's biological explanations for society's ills was displaced by the very real need to overcome the gloom which accompanied economic difficulties and to find cause for faith in the future. Nevertheless, the uses to which standardized tests were put continued to reflect the same old attitudes. Standardized intelligence tests remained as "scientific" tools for differentiating human capacities, capacities still believed by many to be biologically determined. Standardized achievement tests continued to be used to determine students' educational futures.

A major educational concern of the General Education

Board and the Carnegie Foundation during the 1930s was the development of curricula that would meet the changing needs of secondary education at a time when enrollment was increasing rapidly.[196] Standardized tests were useful in defining those needs. For example, the first two steps of a General Education Board funded plan for the "improvement of instruction" in Virginia in the early 1930s were dependent on use of "objective tests."

> As a first step in this direction [for improvement of instruction], the State Department has undertaken to learn by means of objective tests the effect of present procedures . . . on the educational progress of pupils. . . . The second step will be a revision of elementary and high school curricula in such ways as may be found desirable to meet changing social and economic needs and to remedy deficiencies revealed by the objective tests.[197]

A significant part of curriculum development related to vocational education. Vocational education related to "changing social and economic needs" of the depression when high unemployment influenced many to continue schooling because jobs were not available. It related to those changing needs when anxieties to find employment after additional schooling was no longer an option were felt by young people and their parents. Not least of all, the development of vocational education related to social and economic changes when educators realized that many of the new numbers of young people enrolling in secondary schools since the 1920s were not responding predictably to traditional curricula.

"Objective" standardized tests served earlier educational needs; vocational aptitude tests developed to serve needs of the late 1920s and 1930s. The relationship between the development of standardized tests and what became "vocational guidance" was perceived by the Carnegie Foundation as a direct one. That foundation, discussing in 1937 its contributions to projects containing examination and test development, stated that "from it has grown the whole concept of educational and vocational guidance."[198]

During the depression years, the General Education Board and the Carnegie Foundation became increasingly involved in vocational education, both related and not related to test development per se. The General Education Board, for example, contributed to national conferences which included vocational education matters through the American Council for Education[199] and to research projects involving vocational guidance and testing through the A.C.E.'s Committee on Measurement and Guidance.[200] Appropriations to the Stevens Institute of Technology in the early 1930s contributed directly to the development of vocational aptitude tests.[201] The Carnegie Foundation contributed to vocational guidance projects through work of the University of Minnesota and through the Pennsylvania study, which included comparative testing of vocational groups.[202]

Neither the foundations nor educational research

institutions were impervious to the economic effects of the depression. The depression influenced educational institutions early, resulting in more requests for foundation aid. By 1933, reports and minutes of Carnegie and Rockefeller foundations gave witness to their becoming more conservative with grant amounts and more cautious with the selection of projects. Appropriations were more and more frequently concentrated in educational institutions with which relationships had already been established, providing greater predictability of success and revealing even less willingness to "gamble" on the unknown than had been the case in earlier years.

By this time, foundations had also gained a better understanding of educational issues and could respond to requests for funding with the authority of established institutions with stores of organized information that had been accumulated over more than twenty years. Research projects became increasingly complex, covering broad, often comparative subject areas and involving more researchers. An advantage of this approach was to increase the probability of measurable outcome from at least some portions of such projects. Both of these predilections also served to help protect the images of foundations as institutions in the mainstream and serving the mainstream of society. Research continued, and the refinement of standardized tests and attempts to discern assumed levels of human abilities

and characteristics were two concerns which continued to receive attention.

Exemplar Projects

"Scientific Management" of creative processes. Even before World War I, standardized tests moved into the arts as a new field for measurement. The "Psychology of Music Study," directed by Carl Seashore of the State University of Iowa, occurred between 1916 and 1921 and was among the earliest of foundation aided projects which applied standardized tests to the arts. Frequent references in Rockefeller and Carnegie literature to Seashore's test for music capacity indicate that it was in use for a variety of purposes for at least twenty years after the actual study. These included hereditary studies of the Carnegie Institution in Washington and the "Gifted Students Project" of the National Research Council.[203]

Seashore's objective for the application of psychology to the measurement of musical talent was to make possible the finding and directing of that talent. A 1915 article stated that

> the science of individual psychology to-day virtually "dissects" the genius, analyzes and measures talents, sets out limitations, diagnoses the possibilities, and directs the development of the individual.[204]

Seashore envisioned the use of measurements of individual capacity for musical pitch, time, and intensity

for purposes of vocational guidance. Apparently, he did not entertain romantic notions of music being the "language of the soul" and therefore not subject to external controls; his concern was for the management of developing young musical talent. A 1916 letter from Seashore to Abraham Flexner of the General Education Board made his objective clear.

> When it is realized that we spend in this country a great deal more money on music than we do on our entire system of high school instruction, there would seem to be a crying need for an entering wedge in the direction of scientific management in the selection and direction of musical talent.[205]

When Frederick Keppel of the Carnegie Corporation spoke of the matter ten years later, the development of means for the methodical selection of persons to be trained in the arts was still a concern and the progressed state of the art of testing gave encouragement that such was possible.

> The possibility of devising reliable tests on inherent capacity for creative art is not a remote one; much has already been accomplished for music by Seashore and others. Noone knows the economic waste, to say nothing of the inevitable human suffering involved in our present hit or miss selection of those whom we shall train.[206]

Developing and distorting a standardized visual arts test. Many of the grants of the Carnegie foundations for arts projects were linked with education for the visual arts in colleges, universities, and museums. Among appropriations contributing directly to the development of tests for the visual arts during the 1920s were grants to the College

Art Association for competitive art examinations which were to result in aid to the cause of the scientific selection of advanced art students. Separate grants for the development of more general art tests included grants to the State University of Iowa for preparation and standardization of the Norman C. Meier art tests (under the supervision of Carl Seashore).[207] Separate grants were awarded to Erwin O. Christensen, to Norman C. Meier, and to Gregor Paullson for tests and studies of "native sensitiveness to aesthetic impressions" and of art appreciation.[208] A small grant to Hunter College for art studies by Margaret McAdory produced an art appreciation test which two years later was standardized by the Institute for Educational Research at Teachers College, Columbia University, through still another grant of the Carnegie Corporation.[209]

Describing various uses of one of the resulting tests, the McAdory test, helps demonstrate how confidence in the validity of the function of standardized tests could come into conflict with the dubious validity of some specific tests themselves. Educators and researchers interested in the concept of standardized tests for identifying "special" students sometimes adapted tests that were already available. As a result, some tests underwent conflicting interpretations, criticisms, and simple overuse.

The McAdory test, besides being used for the purposes for which it was designed, was used and adapted

according to whatever various researchers desired to prove. Two adaptations were in conjunction with early 1930s studies by Dr. Mildred Dow Voss as parts of the Carnegie funded "Genetic Studies in Artistic Capacity" at the State University of Iowa. One of them attempted to measure the "artistic judgment" of children younger than those with whom McAdory's test had been standardized.[210]

A report submitted to the Carnegie Foundation by the Institute of Educational Research of Teachers College, Columbia University in 1936, was highly critical of the validity of both the original test and of Voss' adaptations. In tests of art judgment, Voss, in the process of modifying McAdory's test for lower aged children, had retained a large number of test items which, according to the Institute, "Dr. McAdory herself has come to consider among the least useful items." The writer of the report clearly recognized the invalidating effect of adapting the test to new purposes, and complained that "Dr. Voss has departed radically from the original conception of the McAdory test, but seems unaware that in so doing she has destroyed whatever value it had."[211]

The same modified test was applied by Voss to other studies including one on "Conditions Effecting [sic] the Functioning of the Art Appreciation Process at the Child Level." The critical source quoted above, here questioned the value of the modified tests used "as an absolute

measure of anything except how near the subject's taste coincides with that of the author."[212]

The desire to use the McAdory test to prove preconceived notions is even more apparent in its use with Navajo children in a study of the "mental characteristics of races" by the Carnegie Institution of Washington. Here the test was repeatedly adapted for the purpose of demonstrating the artistic capacity of Navajo Indians.

The initial use of the McAdory test with Navajo children during the mid-thirties was clearly recognized by the investigators as inappropriate.

> These results were in every case lower than the norms [made upon white children]. It is generally conceded that the Navajo Indians are artistically inclined, as is evidenced by their rug designs, jewelry, and pottery making. Thus it must be said that the McAdory Art Test in its present form based as it is on White man's culture, does not reveal the artistic capacity of the Navajos. A test is now being designed by us based upon articles from the Navajo culture.[213]

The new test was another adaptation of the McAdory test

> in which pictures of horses, cows, trees, clouds, and other natural objects replaced pictures of the dresses, fences, silverware, automobiles, etc., of the McAdory Art Test. Our modified test was given to Navajos and Dutch whites, with the interesting result that the Navajos judged all objects from a utilitarian standpoint, while the whites judged them more from the point of view of art.[214]

The tests were still unsuitable. The strain of trying to fit the test (of questionable value in the first place) to people of a culture different from the one for

which the test was designed was revealed by still another adaptation which attempted to prevent test subjects from again "misinterpreting" the test items. "During the current years, the text was further revised in such a way as to eliminate the consideration of utility."[215]

A broader perspective--inklings of cultural bias. A contemporary complaint against standardized intelligence and achievement tests is that they evince no awareness of cultural differences, and that therefore they are culturally biased in favor of persons who have experienced limited types of social, economic, and educational backgrounds. The adaptations to the McAdory test for use with Navajos give evidence that at least some of those who developed and/or used the early versions of standardized tests were aware of cultural differences. But the above use of that test also demonstrates that the level of awareness did not go beyond a superficial sense of difference. Those responsible knew that cultural differences between the Navajos and the whites with whom the test had been standardized prevented the McAdory test from being an accurate measure of Navajo artistic capacity. Yet the response to this realization was to superimpose on the already existing tests what those white men and women perceived as Navajo culture.

The most objective, most carefully adapted and validated standardized test reflects some of the values of the

society in which it was created. The paper and pencil form of the McAdory Art Test was designed for persons who had at least some experience with the traditional classroom. Even adapted by way of verbal instructions, it required an impersonal, correct-incorrect, and acquiescent "follow-the-directions" attitude on the part of its takers. Of course, as a test in general art judgment, surely a subjective competence, the test could hardly be judged as objective in any case by contemporary standards.

Some funding trends of the 1930s--the Cleveland Museum of Art study. Research in children's art abilities through the Cleveland Museum of Art demonstrated a more sophisticated attitude about the use of standardized tests and a broader, more carefully defined approach to educational research projects. The Cleveland Museum of Art study, for which General Education Board funding began in early 1935,[216] reflected the move to research covering broader interrelated subject areas. It also used a variety of consultants and promised to appeal to the interests of progressive education.

The General Education Board could be confident that the Cleveland study of children's art abilities would lead to solid conclusions because its parameters were various and well-defined by information previously gathered. The study was built on a museum program of art instruction that

had been operating for nineteen years, and on an adolescent psychology study connected with the Brush Foundation that also was already in progress. Much of the material necessary for the study was available when funding from the Board began. Data regarding personal and social observations as well as observations of the artistic progress of individual children had been collected over extended periods of time and would be used in facilitation of the project.[217]

The study was supervised by Thomas Munro, educational director of the Cleveland Museum of Art and gained the assistance of people from several other institutions as well. It drew from the educational evaluation expertise of Ralph Tyler and Paul Diederich of Ohio State University, and of psychologists affiliated with the State University of Iowa and the Carnegie Institute of Technology. Robert J. Havighurst and Perry Mitchell, working through the General Education Board, also contributed to the direction of the study.[218]

A paper proposing the Cleveland study of the General Education Board offered the banner of its potential appeal to "progressive educators." Emphasis was to be placed on an approach to art which encouraged the assimilation of cultural heritage without discouraging the use of individual imagination. An attempt to adapt teaching materials "so that each child may enjoy and learn with the maximum success" was to be made. The study would also provide "a

comparative approach to the arts, involving music and literature in relation to the visual arts."[219]

Before making assumptions about the "progressive" nature of the Cleveland study, however, the reader is reminded that the term has sometimes been very loosely applied. It can be used to refer to ideas for structures which allow schools to become vehicles for creating a new, more democratic social order and which cause schools to conform to the needs of individual children. The term can also be used to refer to systems which simply use the jargon of "meeting children's needs" and "cooperation" while in fact focusing "upon differentiating the structure and fulfilling the goals of social efficiency and social control."[220] And, of course, "progressive education" can also refer to a variety of concepts between those extremes. The Cleveland study used much of the jargon of progressivism. Some of its methods and conclusions, at least as of mid-1936, seem to have been more inclined toward issues of social control than toward those of social democracy. To explain:

The Cleveland study dealt with a variety of interrelated topics which attempted to differentiate children's abilities in both art and socialization. It used test and other data to seek a fuller understanding of "the development of aesthetic powers as parts of a well-rounded personality, rather than the imparting of set skills of [sic] facts for their own sake."[221] Methods of education in the

arts, cultural history, and experiments in artistic production were among the related matters which were coordinated in a plan for the general topic of "aesthetic psychology."[222]

The implication of greater concern for social control than for schools conforming to the needs of individual children was most apparent with the study's "aesthetic psychology" component. Beyond student's progress in artistic production and appreciation, the study dealt with the background and socialization of its participants with a view toward "the possible effect of art experiences upon . . . habits of mind."[223] These "habits of mind" related to the undefined "well-rounded personality." Accumulated information was studied with an "aim at discovering and interpreting significant characteristics." In addition, "findings would be correlated so far as possible with age, race, and other individual factors."[224]

The study eventually related a variety of behaviors and responses to the desired goal of aesthetic appreciation which did reflect "habits of mind." Among these behaviors were the ability to assume a "receptive and compliant" attitude toward aesthetic stimuli, and the ability to make "specific responses . . . to specific cues" . . . and "to restrain or redirect such responses to any degree and in any way desired."[225]

Aesthetic ability defined in terms of sublimation made the implication of the concern for control even more

obvious. The person with aesthetic appreciation should also be able "to respond to works of art and other aesthetic objects . . . as substitute satisfactions for inhibited primary impulses . . ."[226]

Interest in the nature of aesthetic appreciation, whether it came by education's training or by the conditions of birth, related to concern for the state of 1935 society. By October of 1935, Munro had become increasingly interested in the importance of "the study of cultural history and the study of experimental aesthetics . . . for our own social difficulties today." Munro and Lawrence Frank, associate director for Child Studies of the General Education Board were both "convinced" that the study's contribution to "knowledge of the role of art in social life and thinking" would be important in affecting "the really profound changes in our culture that now impend. . . ."[227]

Standardized tests were significant to the facilitation of the Cleveland study of children's art abilities but they were not the main concern. A sophistication about the fallibility of standardized tests had developed by the mid-1930s and the Cleveland study used tests only as a means to an end. In attempting to identify "traits" which might be involved in producing and in appreciating art, the Cleveland study used the Meier-Seashore, McAdory, and other standardized tests. But they did so from the point of view that "general artistic ability cannot at present be reliably

measured, because of the wide differences of opinion as to what constitutes true art values."[228]

Measurements of differences and similarities of abilities were attempted by the study, but they were made in the context of what was associated with success and failure in art classes.[229] And a test of reasons for preferences in art was attempted, but with the understanding that student "ability to form and express . . . opinions independently might depend more on verbal facility than on artistic insight and judgment."[230] But in spite of these recognized shortcomings, the role of standardized tests in educational research was by 1935 so common that their use for such research was practically a foregone decision.

"Intellectual life" and comprehensive examinations. In 1931, a project originally conceived to be a study of the "intellectual life" in colleges became an investigation of comprehensive examinations in colleges. Had it not been for the gathering momentum of test usage during the period, and to a lesser extent, to the influence of the General Education Board on the direction the project should take, such a recasting of the original conception in all likelihood would not have occurred.

The development of various experimental educational techniques was one response to rising enrollments in secondary schools and colleges in the late 1920s and the 1930s.

Informal interviews between the Association of American Colleges and the General Education Board in early 1929 indicated that the study of intellectual life would take the direction of "an appraisal of educational experiments."[231] By August of that year, the Association had presented a formal proposal to the Board for a project called "The Promotion of the Intellectual Life in American Colleges." The project was to have two main purposes.

> 1) to discover what influences are being exerted and what agencies are being employed to stimulate the intellectual life among the faculties and students in the American undergraduate colleges of liberal arts and sciences; and
> 2) to appraise and evaluate these efforts.[232]

The vagueness of that proposal required finding a more specific focus; after the proposal was submitted to officers of the General Education Board in October, 1929, the Association of American Colleges was requested to "make the proposal more definite."[233]

Through 1930, verbal and written input from members of the A.A.C. and the G.E.B. brought the project's focus to comprehensive examinations. A meeting between the organizations in 1930 saw the A.A.C. recommend "that the General Education Board concern itself actively with a study of the present intellectual content of our American colleges, both in matters of curriculum and independent work of students and faculty." The G.E.B. was not interested in an active role but did suggest five topics they felt were relevant to

intellectual life that needed investigation. Those topics were

> orientation and required courses, honors courses, comprehensive examinations at the end of the sophomore and of the senior year, control of libraries and the use of reading rooms, and training college teachers in graduate schools.[234]

Three years later, the General Education Board established new categories for research focus which resembled four of the five topics, giving increased attention to experimental curriculum in the secondary schools and junior colleges, to investigations in child and adolescent psychology and physiology, and to personnel training for the "advancement of knowledge."[235] Experimental courses and curriculum for making young people "ready for continuous participation in the responsibilities and satisfactions of life to the extent of his individual ability," took the forms, in many cases, of orientation and "honors" courses. During this period, comprehensive examinations were experimental devices and the first two categories of new G.E.B. focus, called "general education" and "child study," contained many components for "devising and trying out tests to measure certain aspects and achievements not directly or satisfactorily measured by extant tests."[236]

Meanwhile, in 1930, letters regarding the search for a focus for the Association of American Colleges project continued to mention the relevance of comprehensive examinations and the need for new techniques of measuring

and evaluation as well as to refer to the more vague concept of "intellectual life."[237]

Besides specificity, the General Education Board was concerned with compatibility of the topic of study and the investigative method to be used. A meeting between David H. Stevens, G.E.B. vice-president, and Robert L. Kelly, A.A.C. secretary, in April of 1930, clarified Steven's attitude that some of the proposed foci for the project were not appropriate to the survey-type method of investigation to be used. Also, the Board "would not be disposed to make a study, . . . at least until we were sure of the method and desirability of such a study." At the same meeting, the two agreed that "studies of comprehensive examinations might prove the practicability of this procedure for small colleges . . ."[238]

By the end of 1930, the Association of American Colleges had

> presented [their] case in more restricted form bearing upon what we formerly called the intellectual life project. We are now concentrating in our appeal for assistance on a proposal for a thorough-going investigation of comprehensive examinations.[239]

The method would be a "study of the results of comprehensive examinations for the bachelor's degree" in a limited number of institutions that had had the "comprehensive system in operation" for five or more years.[240]

The comprehensive examinations that were to be investigated were experimental examinations, developed

primarily by individual colleges or by divisions within them. The purpose of these examinations was to evaluate conceptual and intellectual growth. Part of what motivated their development was the effort

> to get away from the purely credit system in the determination of qualifications for graduation, in the desire to raise the intellectual tone of the college and give the student a more substantial training.[241]

"Intellectual life" was an aphorism for an effort to upgrade the level of conceptual learning and thinking in colleges. Frequently discussed in the annual reports of the Carnegie Foundation and the General Education Board during this period, it encompassed abstract qualities that went beyond what could be measured by college credits and by amount of time spent in college. Often considered part of what would prepare young people for life work and citizenship, the effort to promote intellectual life was also contained in what the General Education Board and the Carnegie Foundation referred to as the improvement of "general education," and in what history has recorded as the movement for "progressive education."

The comprehensive examinations that were to be investigated through this A.A.C. project were an outgrowth of efforts to improve the quality of general education. Emphasis was on the word "comprehensive"; their purpose was to provide a uniform measure of student achievement in comprehensive, integrated, all-embracing learning. The tests

investigated were as likely to be discussion or essay type examinations as they were likely to be short answer and/or multiple-choice type examinations.[242]

As the 1929 topic search had specified, the Association of American Colleges project did appraise educational experiments (specifically, comprehensive examinations), and did evaluate intellectual life; the tests provided a functional and convenient direction for the investigation to take. Its objective was to investigate the use of comprehensive examinations in selected institutions which had used them for several years. A report on those existing comprehensive examination systems which would hopefully aid the decision-making of colleges still considering the addition of various types of comprehensive examinations to their programs would conclude the study.[243]

The A.A.C. was "not interested in the mere statistics of the comprehensive procedure,"[244] and they did not depend on statistics or other examinations to execute the study. Much of the investigation was conducted through personal interviews with students and professors who had participated in programs using comprehensive examinations.[245]

A broader perspective--foundation influence for short answer examinations. One conclusion of E. S. Jones, of the University of Buffalo and major investigator for the Association of American Colleges study of the contribution of comprehensive examinations to the "intellectual life" of

colleges, was that an "external" testing needed somehow to be accomplished.[246] In terms of 1980s thinking, this suggests the external agencies which are now familiar such as the Educational Testing Service founded in 1947, the College Entrance Examination Board, and the Cooperative Test Service. The tests that are offered by these agencies are predominantly short answer or multiple-choice tests. But these are not the types of tests that Jones had in mind.

Jones determined that standardized and externally administered comprehensive examinations were needed. But what he preferred was essay or oral discussion type standardized and externally administered comprehensive examinations. Towards this goal he twice requested General Education Board funding to further investigation of college level comprehensive examining through the A.A.C.,[247] but the proposals were rejected because the G.E.B. had phased out college studies in favor of secondary school and junior college studies in 1933.[248] Disappointed, Jones complained to fellow A.A.C. member, James L. McConaughy of Wesleyan University, of the direction in examinations for which the foundations seemed to have preference.

Regarding the failure to gain G.E.B. funding for the project proposed in 1936-1937, Jones was "quite willing to abide by this decision." On the other hand, Jones felt

> that there are curious things going on so far as the whole field of examinations and examination evaluation are concerned. And some of these things at least seem

> to be tied up with the foundations both of the General Education Board and the Carnegie Foundation for Teaching.[249]

A comprehensive type test that had been developed by the Cooperative Test Service had been given a two year trial at the University of Buffalo. "Many other colleges have done the same thing and have been, as we have been, disappointed in the total values coming from it."[250] The tests were not of the essay or oral discussion types for which Jones admitted preference.

Regarding these tests, Jones complained of two reports which did not admit what, to him, was a bias favoring the short answer type tests. A survey of the testing activities of the American Council on Education [Cooperative Test Service] used a survey board which, according to Jones, "had on it mainly people who had already been strongly committed to the objective tests." According to Jones, a report for the Carnegie Foundation on the development of the short answer tests had been "inaccurate,"

> . . . a serious commentary on the status of such Foundation reports. I cannot help but feel that there has been terrific pressure put forward to sell short-form objective tests by Ben Wood (of the C.T.S.) and his cohorts at the expense of much more valid and substantial objectives in college education.[251]

Use of the terms "objective" and "short-form objective" tests suggest that Jones was referring especially to the proliferation of multiple choice tests.

Jones admitted a bias against short answer tests.

His perspective might also have been a matter of "sour grapes." But some evidence that the short answer type tests were given a decided advantage for development does exist. Continuing support by the General Education Board of the American Council on Education's Cooperative Test Service included $50,000 for experimentation "with the production and trial of some short-form tests that can be administered in 40 minutes, in contrast to the present form of test which requires 105 minutes."[252] Support by the Carnegie Foundation to the Educational Records Bureau's program in testing and educational guidance amounted to (at least) $34,000 between 1929 and 1936.[253] Eventual negotiations in 1947 of the American Council on Education, the College Entrance Examination Board, the Carnegie Foundation, and a $750,000 contribution by the Carnegie Corporation of New York formed the Educational Testing Service.[254] On the other hand, progress in the development of standardized essay and oral discussion type tests (which are more expensive and difficult to standardize) is still minimal.

Toward cumulative record systems. By 1930, the progress of the development of standardized tests had led to early systems for the methodical collection of the data which they provided. In 1935, I. L. Kandel of the International Institute at Teachers College, Columbia University, provided the Carnegie Corporation with a concise account of the

United States experience with standardized tests up to the time of proposals for more broadly inclusive cumulative records systems. The description shows the sequence of events from the early standardized tests to standardized short answer tests, from their use as measurements of achievement to their use as tools for educational guidance, and from the collection of test data for the purpose of standardization to the purpose of educational guidance. "Educational guidance" was not defined.

> . . . Because the earlier experiments with intelligence and standardized tests were not found to be satisfactory, new type or short answer tests have been developed which cover a wider range than the traditional long answer examinations and [which] meet the standards of validity, reliability and comparability. . . . The new type tests have gone beyond their original purpose of discovering achievement and are being used for purposes of educational guidance. In order to secure a measure of standardization and uniformity a number of cooperative organizations, state, regional and national, have been established. The most important result reached so far is the recognition of the need of the fullest available information about pupils and students for purposes of educational guidance, which has led to proposals for the use of cumulative records.[255]

The manageability of the data of standardized tests helped make the development of cumulative record systems possible. Collecting and accumulating information about the progress of individual students was not a new practice in 1935. Hand written comments by school teachers and administrators gathered into individual files had provided one type of cumulative record for decades. And the College Entrance Examination Board, founded officially in

1899, was only one of several organizations which served as clearinghouses of information regarding students who were college bound for specified colleges and universities to which they sought admission.[256] Systematic procedures for the accumulation of progressive information about students became possible with the compact, numerical, and apparently objective data of standardized tests.

Private foundations contributed to the development of agencies committed to the dual purposes of providing cumulative record services and improving standardized tests.

Creation of the Educational Records Bureau was the result of a conference of persons concerned with the improvement of standardized tests and with college admissions problems. According to a 1929 correspondence to Carnegie Corporation president, Frederick Keppel, from Educational Records Bureau director, Charles K. Taylor, the conference was financed by an "'anonymous' corporation" and held in the "hospitable offices of the Carnegie Foundation. Reasons for anonymity were not explained. Taylor's implications were that the contributor was either the Carnegie Corporation and/or the Carnegie Foundation.[257]

The first meeting of this group focused on the need for establishing "an impersonal independent organization which, with the aid of experts in testing, could aid schools and parents in determining the college fitness of individual pupils." A second meeting of the group resulted

in the suggestion that the "proposed bureau should test all of the pupils in their principal [sic] subjects every year." The results of the tests would be filed so as to develop a "cumulative school history" which would be sent to designated colleges as pupils applied to them.[258] The anonymous corporation guaranteed $15,000 a year for two years to aid in getting the bureau started and in the fall of 1927, the Educational Records Bureau was prepared for operation. By 1936, the Bureau had established an information service on tests, record forms, and "the organization of testing and guidance procedures for various types of schools," with the help of over $30,000 of recorded support of Carnegie foundations.[259]

Interest of the Carnegie Foundation in cumulative records related to two inter-connected issues. One was the persistent problem of finding proper methods for admitting students to college. The other was the perceived need "to have vastly more knowledge about the nature of this person that we call the student."[260]

In June, 1935, Walter Jessup, president of the Carnegie Foundation, spoke to what he saw as an imperative need for "a system whereby information [about students] will be systematically gathered in a routine way . . ." This "realization" had come in the United States after several decades of attempting to find suitable means of dealing with transferring students from the secondary level of

education to college or university. Processes for choosing students for college admission had fluctuated between various combinations of examinations and secondary education certification. These and other examination issues had been considered in a long-continuing experimental study pursued by members of the Carnegie Foundation staff in Pennsylvania. Begun in 1928 and still continued in 1935, the Pennsylvania Study had traced the progress of approximately 30,000 students through high school and into college primarily by means of standardized examinations. A "disconcerting" outcome of the study had been "to find that in all too many institutions the relationship between the two periods [of standardized testing] had been relatively little." From this the Carnegie Foundation had "come to a new conception of the importance of knowing the progress of learning" and to appreciate the need to better "understand the student himself."[261]

For the time, at least, the key to understanding the student and his progress seemed to be a systematic means of gathering available information.[262] Information, for the most part, meant standardized test scores. This particular response was consistent with the desire to build greater systemization into the educational system and with the inclination to apply the various types of standardized examinations to new purposes.

Foundation money had also aided in the creation of

the Cooperative Test Service of the American Council on Education. In the early 1930s, the General Education Board had granted continuing appropriations which "enabled the Cooperative Test Service to organize and to carry forward its work."[263] Both the Educational Records Bureau and the Cooperative Test Service were concerned with the refinement of standardized tests and with simplifying the process of college admissions. Both became centralized agencies for gathering accumulated student records.

Conclusion--Foundations and the Systematic Differentiation of Human Capacities

A general overview of educational perspectives of the General Education Board and the Carnegie Foundation can be gleaned from their annual reports. This is most frequently true of the Carnegie Foundation. Besides fiscal reports and brief descriptions of sample projects being funded, the reports often contain essays regarding particular educational issues. These are usually written by the current president; often, related topics are discussed by other officers or staff members. Perusal of these essays can reveal more or less consistent themes.

The five essays included in the 1934 annual report of the Carnegie Foundation each deal with various aspects of the interrelated conflicts inherent in questions regarding standardization in the organization of higher education,

and regarding attention to individual capacities and needs. Two general attitudes are revealed in each of these essays: some degree of uniformity and regulation was felt necessary, and the spirit of individualism, especially as it related to the independence of individual institutions and to the divisions in society which result in the different classes, was felt equally necessary. These Carnegie Foundation attitudes favoring uniformity and individualism occurred within a three-way division which revealed the role of standardized tests in advancing them. These divisions were belief in the virtues of systematic management, belief in the value of differentiating human capacities, and confidence in the capability of standardized tests to accomplish those ends.

The spirit of scientific, systematic management influenced thinking which led to proposals for solutions to problems. The 1934 annual report of the Carnegie Foundation spoke of an excess of rigid educational standards developed earlier in the century as having set back the ideals of education. That excess was perceived as negative. But as the essays of that report theorized about its modification, the resulting plans took another rigid form.

A concern of higher education and of the foundations which contributed to educational research at the beginning of the century was to establish a modicum of uniform college entrance requirements. A product of this concern was the "Carnegie unit" method of measuring the education that took

place in secondary and higher education institutions. By the early 1930s, the method, from the perspective of the Carnegie Foundation, was no longer viable.[264]

Uniformity needs had been met to the extent of too frequently taking precedence over educational needs. The 1934 Carnegie Foundation report described standardization procedures as having a negative effect on education. As stated by Carnegie Foundation president, Walter A. Jessup,

> . . . In practical operation the so-called "Carnegie unit" and other standards of educational classification have become formalized into a more or less mechanical enumeration of descriptive items concerning the educational program, such as length of term, frequency of class exercise, preparation of teacher, and other items supposedly closely associated with educational effectiveness; the actual results in individual education have all too frequently been taken for granted.[265]

The issue was the cost of this to "general education," a phrase in this context used to denote a comprehensive, integrated attitude toward learning, knowledge, and research, and similar to some aspects of so-called progressive education ideals. Concern for college credits, for instance, diverted student attention away from intellectual growth. And "the artificial integrity of credits . . . kept professors and departments in a jostling ferment of dissatisfaction and readjustment, the net effect of which [had] been to compromise and distort the educational outcome which was sought."[266]

William S. Learned's version. In the essay entitled "The

Junior College, the University, and the Community," Carnegie Foundation staff member William S. Learned expostulated the ideal of general college education as serving the whole person by giving "more than superficial contacts with each great field of human interest, . . . [by making] particularly intelligible their problems and relationships to each other." General education was also a "social device." As well as instructing the individual in the values and traditions of his or her culture, the object of general education was to make a person "a positive, responsive, contributing unit in social affairs by cultivating him to the limit of his powers."

To Learned, the faltering quality of general education was due in part to the vagueness of its concept.

> . . . it lacks any rational aim that can be trusted to arouse an inquiring student mind, and it has no organized arrangements for an appraisal with which to make that aim specific.[267]

In spite of the position that concentration on objective arrangements for education had distracted from the ideal goals of education, Learned suggested bureaucratic-type responses to problems of education. "Organized arrangements" and precise goals would be the solution to ineffective general education. The proposed solution recommended reorganization and borrowed from the experience of professional schools.

> The real task seems to be to <u>organize our cultural values</u> with something of the comprehensive precision

> that already characterizes the professional curriculum and [to] introduce them . . . as a flexible preliminary experience for all.[268] [underline mine]

Another facet of the problem of improving general education, according to Learned, was the attempt of the four year college to perform two entirely different functions. The first was general education. The second function was "the specialized professional pursuits of the later period" of the four year college. College, as it was then organized, could serve neither function adequately in Learned's opinion, for it was "Perched upon two steeds moving vigorously in opposite directions . . ."

Learned perceived the reorganized junior college as the appropriate vehicle for solution to the problem. The junior college could provide a proper general education and direct "its impulses . . . not upward toward some institution thought to be 'higher,' but outward into the problems and needs of its supporting group . . ."[269]

It is with the division of the two roles of higher education that acceptance of the division of social classes, at least through maintenance of higher education's sorting function, is implied. For either two or four year colleges to effectively serve the comprehensive goals of higher education required, from Learned's point of view, not only a more adequate program for general education but also a more complete separation between it and professional education. General education provided understanding of abstract

"knowledge," and of social and cultural heritage. Professional education, on the other hand, has its emphasis "on a special knowledge and technique which [Learned felt] it must be ruthless in upholding." General education was

> the precise opposite of that which does and must increasingly dominate professional training. . . . [Professional training] tends to be selective in its admissions, comprehensive and exacting in its processes, exclusive in its final status.[270]

This separation of roles is crucial to appreciating the survival of an attitude which was suggestive of the acceptance of persons divided into separate class and occupational roles as the natural order of things.

In a 1931 discussion of philanthropy between World War I and that date, Carnegie Corporation president Frederick Keppel stated that

> . . . since the war, we have as a nation been overorganized for good works, and to interfere with the operations of the law of the survival of the fittest has its elements of danger.[271]

Learned's acceptance of the same principle was strongly implied as he praised the beginnings of practical adjustment as implemented by the University of Minnesota, an institution which was open to students by virtue of high school graduation. That institution had developed a system whereby students who might be expected to enter professional education would, from the beginning, be separated from those who could be expected to attain general education alone. The program had begun in 1932 and, in 1934, had

received $75,000 in aid from the General Education Board for its continued development.[272]

Tests were an important facet of Minnesota's new system for separating those two groups of students.

> Preliminary tests conducted over several years had revealed with almost uncanny accuracy which of the entering students would fail to complete a university course. The present arrangement consists of gathering such students into the so-called General College of the University.[273]

In spite of the fact that by the mid-thirties some educators were beginning to use and apply standardized tests more cautiously, Learned's plan for revitalizing higher education relied heavily on them. Their results would reveal the extent to which institutions suceeded in providing general education. They would be used to evaluate student accomplishments in general education. Standardized examinations would also be used to choose those who were "fit" to pursue professional education and training.[274]

To Learned, the role of uniform examinations in this process had been prompted by a "crude but suggestive" use of general examinations for sophomore students set up by the Carnegie Foundation in connection with another college project underway in 1930. The use of duplicate examinations had been repeated with the same group of students two years later. "As an instrument of measurement the examination was surprisingly effective and . . . the principle of its uniform application to reveal the extent of general

education was sound."[275] The test had covered five fields of study, with two to three hundred items for each field.

The tests would provide professional institutions with the necessary information for choosing its select clientele. Whatever such tests might reveal to be the "bias" or predilections of individual students, Learned felt

> . . . the results should enable us to outline in exact terms the true pattern of the student's powers and equipment, instead of disguising them under a vague blanket of opinion, and should thus make it possible for the various kinds of professional education to choose intelligently for admission the types of students best qualified for their particular pursuits.[276]

The movement for progressive education during this period was one of the trends which drew attention to the need to recognize students as individuals. This may have related to Learned's attitude of a beneficial service being performed for students by separating them at the beginning of their college careers into categories for general or professional education.

> When potential failures can be identified as well before as after failure it becomes little short of a crime to take a student's money and a year or more of his golden youth simply to brand him as unfit, destroy his confidence, and increase the difficulty of a true solution for his educational problem.[277]

No mention was made of the possibility that the device used to identify the "potential" failure "as well before as after" actual failure, might do at least equal damage to the student's confidence.

The General Education Board's version. General Education

Board reports also evidenced concern for organization, especially related to what they too called "general education," and for the value of differentiating human capacities. The types of G.E.B. projects in which the development of standardized tests occurred seemed to place less emphasis on the tests themselves than did many of these of the Carnegie Foundation. But, like the Carnegie Foundation, much of the educational work of the General Education Board revealed a confidence in the capability of standardized tests to serve the concerns of organization and differentiation of capabilities.

The annual reports of the General Education Board through the late 1920s and early 1930s spoke frequently of the need for the reorganization of education, especially at the secondary and early college level. Ordinarily, however, they did not carry the suggestion of rigidness of organization as was more often the case with the Carnegie Foundation. Instead, the need for attention to organization was coupled with what was perceived as a need for attention to the social role of education.

A new focus by the General Education Board on the needs of general education in 1933 concentrated on the reorganization of education according to that social role of education. As expressed in the report of 1934-1935, "Educational reorganization, if it is to be satisfactorily effected, must take the form in part of comprehensive social

planning."[278]

The basic functions of education were different from those of the beginning of the century as a result of "social change." According to the "Report on the Program in General Education," in the annual report for 1936-1937, the increase in the percentage of appropriately aged young people in secondary schools was from 6 percent in 1890 to over 55 percent by 1936, and was one major effect of social changes. This phenomena was described primarily as a result of industrial and population changes. Industrial changes had reduced the number of young people employed as trade apprentices and increased productivity per worker. A larger percentage of the population was adult and it was no longer "absolutely necessary to call upon young people to aid with the work of the country."[279] Hence, an increasing proportion of young people were in school instead of at work. (Another element of change which brought more young people to schools, of course, was the high unemployment which accompanied the depression, but this element was not mentioned in this specific report.)

The increase in numbers resulted in greater diversity in the "capacities and interests" of young people in high schools and colleges. And the occupational expectations of these new numbers were assumed to be different from those of earlier years.

> Our secondary schools and colleges are crowded with boys and girls whose interests and expectations in life are quite different from the interests and expectations of those for whom the secondary schools and colleges were created. Only a small fraction of those in the senior high school, and only a part of those entering college, can enter the professions and the higher-paid white-collar occupations.[280]

In view of changing conceptions of educational needs, the General Education Board had established new priorities in 1933 which gave special attention to the responsibilities of education "to set the individual in satisfactory general relation to the world in which he lives." Emphasis was placed on "individual adjustments" and understanding of the "manifold relationships of the individual to the culture of which he is a part." New projects were concentrated in secondary schools and junior colleges. Categories for general education set forth as especially significant for this individual adjustment to the whole were mental and physical health, understanding of physical health, understanding of the physical and social environment, "vocational orientation and adjustment," and avocational development.[281] Investigations of new curriculum and of new means of evaluation contributed to the attainment of these objectives.

The approaches of the General Education Board to the changing needs of education in the 1930s were different from those of the Carnegie Foundation. But the General Education Board placed value comparable to that of the

Carnegie Foundation on the importance of differentiating human capacities and comparable confidence in the capability of standardized tests to aid in meeting the "new" needs in education. This was illustrated by grants for vocational education being accompanied by grants for the development of vocational aptitude tests,[282] by grants for the development of aesthetic appreciation containing components for the development of tests for the measurement of that appreciation,[283] and by grants for experimental programs for "progressive curriculum" being accompanied by components for developing more effective means of measuring the progress of students participating in those programs.[284] Not least of all, the G.E.B.'s confidence in standardized testing was illustrated by appropriations to the American Council on Education for the development of the Cooperative Test Service.[285]

The approach of the General Education Board to the reorganization of general education differed from that of the Carnegie Foundation in that social orientation was stressed more than systematic management. Either way, standardized tests were used to rank student accomplishments--to allow some the sense of accomplishment while others were sifted from competition. Either way, the effect was to create more barriers to equal educational opportunity.

Acceptance of the idea of significant differences in levels of abilities also made it easy to assume that former goals for secondary and early college education were not attainable for some who were seeking them. The "solution" was improved and reorganized general education. Goals changed in response to perceptions of the "marked change in the nature of secondary students";[286] former goals of secondary and early college education were felt to need adjusting to meet negative expectations of the capabilities of the new student populations.

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[188]Ibid., p. 206.

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[191]Terman, Genetic Studies in Genius, 1:569.

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C H A P T E R V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

This study has dealt with a complexity of interrelationships which should indicate the complexity of some educational problems that go beyond the use of standardized achievement and intelligence tests.

Maintaining the Sorting Function of Education

Education in Western culture has historically fulfilled a function of distinguishing social classes from one another. As a luxury of the noble and ministerial classes and eventually of governmental and advocate groups, education in past centuries was limited to those who served special roles which required literacy.[287]

United States education at the beginning of the twentieth century was only minimally beyond this point. In 1900, unskilled labor made up over sixty percent of the United States labor force.[288] Although the ideals of democracy called for a literate populace, survival did not. Education was perceived as a good thing but it was not a necessary one. Universal literacy was an ideal goal but the economy did not require literacy of even the majority of its workers. And education beyond the common school was still a luxury.

Education served a sorting function. Beyond basic literacy, it was allotted to two groups which often overlapped: those who could be most easily educated to fit the occupational roles which required education beyond basic elementary literacy, and those who could be most easily spared from the actively productive end of the economy for the time required to pursue education beyond the common school.[289]

Standardized testing, the Carnegie Foundation for the Advancement of Teaching and the General Education Board were initiated and received into United States education during this period. The early shaping of each occurred during two decades of time when sorting for occupational classes was still perceived as a proper thing for education to do. The period was also characterized by strong reminders of nineteenth century social Darwinism, that is, adaptations of Darwin's theory of the survival of the fittest designed to justify the inequality of wealth and privilege of individuals within the species. Another trend, scientific management, provided a complementary structure in which standardized tests could develop and by which private foundations could demonstrate their superior administrative ability by "wisely" distributing to society[290] the great fortunes of Andrew Carnegie and John D. Rockefeller.

The nation changed. Industry began to require fewer unskilled workers and United States business began to

require "more men and women for . . . types of work that demand experience and education beyond the elementary school level."[291] School enrollments increased. But the sorting function of education remained.

Educational sorting was not compatible with ideals of democratic egalitarianism. It was, however, compatible with the type of individualism to which some gave credit for rapid industrial and commercial development in the United States. Beneath the sorting and the individualism lay the common assumption that men and women achieve not by cooperation but by excelling over other men and women.

Foundations reflecting American individualism. From the time of their inception through 1935, the Carnegie Foundation and the General Education Board sustained an attitude which revealed the sense of individualism as it implied "survival of the fittest" as the natural order of things. The term individualism represents the sense of the importance of the individual as expressed in the United States Declaration of Independence and the Bill of Rights, and manifested in such American legends as the "Robber Barons" and in the ideologies which seek to give all people opportunity to become Robber Barons. The Carnegie Foundation and the General Education Board maintained the spirit of individualism as it related to the belief in the absolute right of people to acquire property and prestige without

particular consideration to how much property and prestige there was to go around. The contexts changed over the four decades discussed here for both foundations usually sought to touch base with what was socially acceptable at any given time.[292] Individualism, the sense of the moral worth of individual prerogative, remained constant.

Nineteenth century individualism had helped to build a nation which stretched from coast to coast, through large areas of wilderness. Carried into the twentieth century, much of the "ruggedness" of that individualism was lost in the increasingly urban and industrial society. Also, the influence of such reformers as John Dewey mellowed it. In the nineteen-teens and twenties, individualism which resulted in exploitation of other individuals became unacceptable to many Americans.[293] But belief in the moral and ethical rights of the individual persisted.

In the context of United States culture, the implications of the single concept, individualism, can be contradictory. Social scientist Robert Lynd discussed in Knowledge for What? the often ambivalent assumptions by which United States citizens live. A sense of individualism in the United States is held to be one of our most pervasive assumptions among twenty "outstanding assumptions in American life."

> Individualism, "the survival of the fittest," is the law of nature and the secret of America's greatness; and restrictions on individual freedom are un-American

> and kill initiative. . . .
> . . . But: No man should live for himself alone; for people ought to be loyal and stand together and work for common purposes.[294]

Individualism can work both for and against society.

In education, individualism carried a dichotomy of roles when associated with what was loosely referred to as progressive education. It could and sometimes did result in broader educational opportunities for greater numbers of children as with schools operating through John Dewey's ideas of democratic education.[295] What was called progressive education could also maintain that it was serving the needs of individual children by "pre-sorting" them.

> The administrative progressives believed that the schools should better prepare students for the tasks they would face in life. . . . Simple realism decreed that the public schools should prepare students directly for subordinate roles in the economy while it screened out those fit for further training in higher education.[296]

Both of these directions in education placed the interests of the individual child first. But they did so from quite different perspectives--on the one hand, fostering equal opportunity; and on the other, promoting educational inequality.

Individualism resulting in the money and resource grabbing competition of the nineteenth century decades following the Civil War made the tremendous fortunes of Andrew Carnegie and John D. Rockefeller possible.[297] At the turn of the century, the sentiment of Andrew Carnegie's "Gospel

of Wealth" justified those fortunes by viewing "Individualism, Private Property, the Law of Accumulation of Wealth, and the Law of Competition [as] the soil in which society so far has produced the best fruit." The Carnegie Foundation and the General Education Board were born in the determination that the problems of the community and of "the Rich and Poor" would be resolved by allowing the "laws of of accumulation . . . distribution . . . and Individualism [to] continue [for the] millionaire will be but a trustee for the poor."[298]

The accumulation of great wealth by individual persons was presumed to be proof of the "superior wisdom, experience and ability to administer" of those persons.[299] Officers of the Carnegie and Rockefeller foundations frequently revealed sympathy with the perspective that the privileged possess superior wisdom.[300] As such, they generally maintained an elitist point of view.

Elitism and acceptance of "survival of the fittest" type individualism is revealed more conspicuously in the patronizing tone which accompanies descriptions of activities found in Carnegie and Rockefeller literature than it is revealed by the actual activities of those foundations. Appreciating this condescending attitude is most easily accomplished by burying oneself in the often verbose rhetoric of successive annual reports of the foundations. Examples may suffice.

Carnegie Foundation policy towards retirement allowances to professors of higher education was adjusted (over a period of time) according to an implied superior knowledge of human nature held by foundation officers. At first, free pensions were to be provided not as a charity but as a "right."[301] Teachers in selected institutions of higher education would receive pensions on the same basis "as that upon which he receives his active salary, as part of his academic compensation."[302]

By 1909, concern regarding the "moral effects" of providing pensions began to be felt. By 1912, fear that a disability provision of the plan was being abused by some professors resulted in the conclusion that because teachers do not rise "above the appeal of self-interest," professors as young as their early fifties were sometimes applying for pensions "upon trivial and selfish grounds." By 1916, the pension to those deserving it was no longer a right but "a very generous and noble charity,"[303] and a contributory system for retirement income was proposed to replace the free pensions.[304]

The patronizing attitude of Carnegie Foundation president Henry S. Pritchett which led to these changes was well demonstrated in an article in the December 1918 Atlantic Monthly.

> Aside from the economic and financial weaknesses which have just been alluded to, there is a more serious objection to the free pension which only those who have

> administered such a system can fully understand. This lies in the fact that, to get something for nothing, or to seem to get something for nothing, has always proved demoralizing. The so-called free pension is perhaps the most prolific breeder of human selfishness ever set up in the social order.[305]

The intent of the shift from free pensions to the contributory annuity system was to free professors from the demoralizing effects of getting something for nothing. The patronizing lies in Pritchett's assumption that "only those who have administered such a system can fully understand" how free pensions breed human selfishness. In changing the policies which regulated pensions, the policy setters of the Carnegie Foundation were merely protecting the morality of unsophisticated professors!

With the General Education Board, the attitude of superior wisdom was most conspicuous with work directed toward aiding Black populations of the South. Much of the work of the General Education Board in the South was for development of educational institutions for Blacks. In all likelihood, this effort contributed significantly to the beginnings of educational opportunity for southern Black Americans. Nevertheless, there is nothing subtle about the patronizing and condescension which accompany the following descriptions of projects for Black education:

Through surveys and other aid to education in the Southern states, the General Education Board had established

itself as a benevolent, impartial agency dedicated to righting the educational problems of the past. Even by disregarding the assumption of superiority implicit in the leadership role taken by the General Education Board, one cannot rationalize their deprecating attitude toward the abilities of Black students. A segment of the G.E.B. account of activities between 1902-1914 discussing educational difficulties in Black colleges and universities illustrated that attitude.

> These difficulties are in many places aggravated by the teachers themselves, who pitch their instruction on a plane at once too high and too remote. The mistake is not an unnatural one. These teachers are men and women of unusual ability, energy, and ambition. Eager to train at a high level the future leaders of their race, they emulate the procedure of the colleges for white boys in which they have themselves studied. As a result, their teaching is too often concerned with tasks which their students are incapable of mastering, or for which there is no practical outcome. The courses offered are often too abstract, too ambitious, or too learned. The students are not lacking in earnestness; they apply themselves to their tasks with all the energy they can summon. But the tasks are too frequently beyond their strength. They strain to grasp what is simply beyond their reach.[306]

From white leaders of the 1910s, attitudes such as that contained in the myth that Black people are unable to "grasp" abstractions, are not unexpected. But one must also consider the very significant limits being thus set on Black education by those who were claiming to be advocates of Black education.

Admiration of "thrifty Negroes" and statements describing the type of training needed by Blacks provide

other classic examples of white paternalism as well as of the more general patronizing point of view.

> . . . the relations between the intelligent and progressive whites and the intelligent and thrifty Negroes have never been so good as they are today. . . . . the Negro must be trained to desire improved surroundings and to strive for them . . .[307]

These 1920 references to the virtue of thrift and to "training" people to desire improvement are reminders of qualities indicative of those persons deserving the benefits of philanthropy as described in Carnegie's "Wealth" (and discussed here in Chapter II).[308]

Foundations as educational leaders. After World War I, expressions of patronage and allusions to the preference for individual prerogative softened both with society and with the foundations. The Carnegie Foundation and the General Education Board did not function independently from the social events and trends around them. The survival of the fittest attitudes which had supported individual prerogative, especially in business competition, took on a predominantly group orientation in the form of nationalism and racism during the early nineteen-teens. Social reforms of the teens resulted in part from growing awareness of negative side-effects for human beings of the intense competition that had characterized the earlier period. Also, World War I heightened awareness of the distasteful and militaristic potential of reckless nationalism.[309]

But the role of these large foundations had already been established. Their service to education, both financial and advisory, provided them with leadership roles which were consistent with the elite positions of superior wisdom which they had taken at the beginning of the century. Continuous refinement of the rules of the Carnegie Foundation pension plan and of rules for the admission of new institutions to that plan advanced the role by keeping research institutions sensible to the standards they had to meet to gain financial assistance. The dozens of state surveys conducted by the General Education Board accomplished the same end. The fact that many of those surveys were made at the request of the states themselves, showed that the states expected leadership from the Board.[310]

Having passed the initial period of searching for appropriate projects, institutions and people through whom educational work could be pursued,[311] work was increasingly concentrated in proven people and institutions.[312] For example, Edward Thorndike came to serve an advisory function to the Carnegie Foundation.[313] Robert Yerkes was frequently referred to by the General Education Board,[314] and an "individualist" could not be recommended for continued funding because "his colleagues in the testing field are not apt to support his requests for assistance."[315] Thus, the "in-group" in educational research gained increasing influence in decisions regarding which research would be

funded by these foundations. Consequently, the Carnegie Foundation and the General Education Board also perpetuated a significant sorting of elite from "common" research.

Increasing enrollments and the progressive education movement dictated attention to greater diversity of students in the late 1920s and 1930s. The foundations responded to the changing needs of education by increasing emphasis on such topics as curriculum development, secondary and junior college needs, and standardized tests which would facilitate better understanding of that diversity.[316] As discussed in Chapter IV, much of the editorial opinion of the Carnegie Foundation and the General Education Board continued to project belief in the fundamental naturalness of the hierarchical division of individuals. Both financial and moral support would be lent to projects such as the General College of the University of Minnesota which separated ordinary from supposedly extraordinary citizens, in this case, from scholar citizens, upon entrance to the university.[317]

Emphasis on the reorganization of so-called general education has implications that go beyond the sorting function of education. Increasing numbers of students entering secondary schools and colleges could conceivably have been met by a positive response to the opportunity to build a larger body of well-informed, cogitative citizens. Increasing numbers were met instead by concerns for education as a

"social device," as phrased by the Carnegie Foundation, and for "comprehensive social planning," as phrased by the General Education Board. For example, in connection with the "marked change in the nature of secondary students," the General Education Board praised the action of educators and educational organizations in "their concern for making a reorganized general education serve to help young people develop a loyalty to democratic ways of living and a confidence in democratic methods of solving social problems."[318] If such reorganization did occur, education would serve to reinforce established ways of dealing with problems and with change.

Reorganizing individual student diversity did not mean finding new ways to educate students who were "different" to educational ends which traditionally were reserved for persons headed for the higher professions. Instead, the dilemma of educating more numbers of more diverse students was dealt with by simply developing more levels <u>within</u> the same hierarchy of social and occupational roles that already existed. Recognizing diversity meant providing a satisfactory general education to those who were not among the "small fraction . . . [that] can enter the professions and the higher paid white-collar occupations." It meant finding ways to educate the increasing mass of people "to meet their responsibilities in a democratic society"[319] which happened to view people in a vertical, pyramidal arrangement.

Such projects would contribute substantially to educational "progress" and, at the same time, leave the sorting function of education intact.

The Carnegie Foundation, the General Education Board, and educational efficiency. The Carnegie Foundation and the General Education Board also contributed to efficient systematizing of education. Again, they were not the sole influences in this direction. Rapid industrial development and economic growing pains at the end of the nineteenth century had set the stage for the scientific management movement[320] which flourished at the time of the inception of the Carnegie Foundation and the General Education Board. Scientific management responded to the desire to increase industrial production and to the increasing reverence for "science."[321]

The phrase "scientific management" referred specifically to efficient systems for industry which were created by engineer Frederick Taylor beginning during the last years of the nineteenth century.[322] Taylor asserted that the principles of his system could be "applied with equal force to all social activities: including homes, churches, 'philanthropic institutions,' and government."[323] Whatever the context, efficiency, related to time, cost, and to some nebulous behavioral ideal, did become a central concern of United States society at the beginning of the twentieth century.[324]

The preference of the Carnegie Foundation and the General Education Board for projects that would increase the efficiency of education and for projects that would contribute to an efficient division of the various functions of elementary and secondary schools, of junior colleges and four-year colleges, and of universities and professional education, has been discussed in earlier chapters. Specific projects which included efficiency goals ranged from the state surveys of the General Education Board, to the activities leading to the development of the National Intelligence Tests after World War I, to the development of record-keeping and test-making systems of such organizations as the Cooperative Test Service of the American Council on Education and the Educational Records Bureau.

The word "efficiency" was used with four typical references during the years preceding World War I, according to Samuel Haber in Efficiency and Uplift: Scientific Management in the Progressive Era, 1890-1920. These were a personal attribute which inclined a person towards hard work and discipline, the energy output-input ratio of a machine, and the output-input ratio of dollars in commerce. Efficiency also meant "social harmony and the leadership of the 'competent.'"[325]

The latter, social harmony and leadership of the "competent," is especially significant in its relationship to maintaining the hierarchical occupational and social

order. "Neutral" efficiency objectives would also contribute to vertically conceived levels of achievement and prestige. From efficiency systems would evolve specialization and bureaucracy. In education, for example, efficient management came increasingly to mean hierarchical management with various levels of authority ranging from students to teachers to principals to curriculum specialists to county supervisors to state superintendents.[326] Persons within the educational system were in a very real way, sorted according to occupational prestige.

Standardized testing, at first received skeptically, became a generally accepted sorting tool for education after having proved its efficiency in assigning World War I recruits to various jobs.[327] During the 1920s, their use contributed to identification of persons with "artistic capacity,"[328] and of persons who were "gifted"[329] for the purpose of providing special and/or experimental training for people thus identified. During the 1930s, their use contributed to the separation of groups of students participating in higher education at the University of Minnesota.[330] These are only some of many examples that have been previously discussed of situations for which "efficient" standardized tests contributed to the maintenance of the sorting function of education.

Implications for Educators and for Society at Large

Deterministic theories of neo-Darwinism that were popular at the turn of the century provided a rationale for a class structure in the United States which had already become a part of its social fabric. The types of uses to which early standardized tests were put were consistent with those theories, were consistent with assumptions that social, work, and educational levels of leaders and followers were biologically natural.

Foundation literature at the beginning of the century makes those assumptions blatently obvious. Awareness of intellectual trends which affected foundation conceptualizations of their roles and purposes provides necessary background information for understanding those assumptions. Awareness of this social, philosophical and political environment gives insight into the circumstances which initiated and fostered the development of standardized tests. This historical perspective should facilitate an appreciation of the bias which those tests still carry.

The major conclusion of this study is that the nineteenth century sorting function of education was inappropriately maintained into the 1930s and that the uses to which standardized tests were put helped make this possible. Early development of standardized tests was initiated and fostered by an ideological environment which accepted that

function and which continued to influence their use in spite of social and educational changes which characterized the 1930s.

It is difficult for educators to resist attaching deterministic interpretations, biological or environmental, to the determinations of standardized achievement and intelligence tests, especially those of the "norm-referenced" variety. Such tests have been and are successful predictors of academic success, partly because uncritical acceptance of them can lead to altered expectations which can affect student accomplishments. Educators should question the reasons for that success.

For instance, one type of bias carried by most (if not all) standardized tests is the esoteric bias of the academicians developing them. That is, standardized tests have been developed from a point of view which places special value on the traditional, academic sort of knowledge and information that is the forte of those who have developed them. As educators, embedded ourselves in various forms of traditional academia, and often impressed by the special status it can confer, trying to see through the bias that is a part of our own world view, can be quite difficult.

In spite of efforts in recent years to rid standardized tests of various biases, especially cultural biases which discriminate against relatively powerless

minority groups, the use of standardized tests to supposedly objectify judgments about who will receive which educational opportunities remains. Even a perfectly objective test, if such were possible, can be subjected to uses which serve the sorting function of education. Efforts to correct identifiable problems of standardized tests and to remove some of their "mystique" through regular publication of questions and answers contained in them are helpful. But more concerted efforts need to be made to assure that these tools, which can serve useful diagnostic purposes, are not put to the basically discriminatory use of sorting.

These efforts are greatly complicated by a particular perspective which dominates national thinking. The use of the phrase "survival of the fittest" to describe human society is no longer socially tenable. The word which contains the same implications and which has replaced that loaded phrase, is "merit." An acceptance of a hierarchical arrangement of society with people divided into roles of varying status is taken for granted, assumed by some to provide the only efficient organization for accomplishing objectives; by others, to be a natural manifestation of so-called human nature.

In 1980, the "fittest" are those who have risen to the top of the status ladder. As long as status remains highly valued, education, as opposed to being committed to helping all people learn, will continue to serve the sorting function.

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[328]For a discussion of this matter, see Chapter IV of this manuscript.

[329]For a discussion of this matter, see Chapter III of this manuscript.

[330]For a discussion of this matter, see Chapter IV of this manuscript.

SUGGESTIONS FOR FURTHER RESEARCH

This study has dealt with general issues in a broad context. Further research could take several, narrower directions, especially in the areas of (1) other historical considerations, (2) more focused historical considerations of testing, (3) other educational issues affected by foundation activities, and (4) specific foundation issues and subjects.

In the first category, the most controversial subject, barely touched upon here, is eugenics. The foundations were interested. The eugenics movement was also affected by the testing movement. It is hoped that any person undertaking this topic could deal with it with as much "scholarship," as opposed to "passion," as possible.

Two other topics in this category are the positive attitudes of foundations towards the German systems of schooling before World War I (and the not surprising shift away from admiring them during World War I), and the patriotism to which the foundations often appealed. Especially noticeable in the 1910s and 1930s, the latter seems to be as closely associated with national trends as were concerns for efficiency.

In the second category, much material exists which

deals with relationships between foundations and testing and Edward L. Thorndike, Robert Yerkes, and vocational education. Relationships between foundations, testing and vocational education imply still other relationships to concerns of economics and corporate liberalism. An even more abstract concern in this category is the influence of belief in determined, unchangeable levels of human intelligence on the reorganization of education that occurred in the 1930s.

A number of comparative studies of the ways in which standardized tests have been applied to systems of education outside the United States invite research. Standardized testing is not restricted to the United States and their uses in other countries have often taken different courses. The Carnegie Foundation "International Study of Examinations" of the 1930s provides one opening for such research. Contemporary comparative studies are other possibilities.

The Pennsylvania Study of the Carnegie Foundation and the Carnegie Corporation of New York has been deleted here. But its influence on testing practices and on the development of cumulative record systems, at least during the 1930s, and its size make it, by itself, a likely research topic.

Many educational issues have been affected by the foundations. The General Education Board took a strong

interest in Black education. They have defended themselves against charges of racism by reminding critics of the era in which most of that work was undertaken and of their perceived need to work "within the system." The annual reports of that Board and the Rockefeller Archives contain much information with which this issue could be addressed.

The Carnegie Foundation influenced such established practices in United States education as the unit system of measuring secondary school course work (the "Carnegie unit") and the tenure system. And, of course, the still active Teachers Insurance and Annuity Association was the direct consequence of Carnegie Foundation efforts to establish a system of retirement allowances for professors of higher education. These three elements of education are interrelated and provide another rich topic for historical research.

This study has made implications of what is called "academic empire building." The resource materials used for Chapter IV alone could probably have been used to develop a major research project on this subject.

Separate research projects could also be developed on the inclination of the foundations and society to consider educational needs in terms of economic issues, and the influence of so-called general education concerns discussed in Chapter IV on the development of the modern junior college.

The specific foundation issue that this writer found pleasantly distracting was the conflict that often occurred between foundation staff people and educational researchers. These conflicts provide a microcosm of power issues, a perspective toward academic empire building, "personality" as related to "leadership," etc. And Abraham Flexner of the General Education Board, who is better known for his work in medical education than for that in public and higher education, is one of the most fascinating historical characters with whom this student has ever become acquainted.

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